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Number 17 of a series of photographs of past presidents of the Association.

I. L. Sharfman

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LAW AND ECONOMICS[1]

By I. L. SHARFMAN

In view of the fact that the war situation, though happily, in the end, rendering possible our assembly here, has prevented the integration of our discussions with those of other social science organizations, it seems appropriate that this address should not confine itself to strictly economic matters. More than ever the various social science disciplines are closely interrelated. They find a common focus in the sphere of public policy, especially as reflected in law and its development. My observations, epitomized as the relationship between law and economics, bear upon the processes of public control of economic activity.

I

As one scans the program of economic discussion being presented at these meetings, it is obvious that its dominant emphasis is upon matters of public policy.[2]

There are sessions, it is true, devoted specifically to the interpretation of recent economic history, the analysis of prevailing economic conditions, the development of basic economic theorizing. But even these discussions cannot escape the pervasive influence of the rôle of government in the economic life of the nation. The inter-war economy reflected in striking fashion both the relative public quiescence of the 1920's and the frantic governmental efforts at recovery and reform of the 1930's. Interpretation of this period poses the problem of how intimately collective action or inaction bore upon the great economic debacle with which we came to be faced, and upon the many frustrations, including the development of world conditions favorable to the outbreak of international strife on an unprecedented scale, which followed in its wake. Analysis of the changing structure of our

[1] Presidential address delivered at the Fifty-Eighth Annual Meeting of the American Economic Association, Cleveland, Ohio, January 25, 1946.

[2] See *Papers and Proceedings, Am. Econ. Rev.*, Vol. XXXVI, No. 2 (May, 1946).

contemporary economy, with reference to such matters as the location of industries, the distribution of manpower, the conditioning environment of financial practice, must find the roots of change, not only in the extraordinary circumstances of the war effort, but in significant preëxisting tendencies; and pre-war developments, only to a lesser degree than the pattern of the war economy, have drawn sustenance, for good or for ill, from the character and direction of government intervention. A like relevance is generally recognized in our theoretical thinking concerning the over-all organization and functioning of the economic order. Exploration of current advances in economic thought cannot, with any approach to realism, be restricted to narrow technical contributions in the traditional sphere of economic theory. There are basic limitations upon the adequacy of economic law, either as a reliable description of the complexities of prevailing economic processes or as a fruitful practical guide to social policy. In thought as in action a consideration of the reciprocal influence of freedom and control upon the operation of the economy is indispensable to promising inquiry. At this juncture it would obviously be folly to ignore the revealing experience of the great depression and the world war, with their extensive subordination of individual enterprise to collective action, or the impact of this experience, whether deemed favorable or unfavorable to public control, upon the character of post-war policies. Even fundamental thinking must reflect at least the value implications of important policy trends.

But the discussions at these meetings are more largely concerned with direct issues of public policy, in relation to specific problems of outstanding significance. Within the limits of a short few days, they can traverse only a relatively small number of representative fields; but in each instance the principal emphasis is upon governmental activity, from the standpoint of the service or disservice of past performance and of future threat or promise. This applies to the domestic as well as to the international problems being explored. Actual or potential measures of social coöperation embodied in legal requirements, in numerous sectors of the economy and through a great variety of expedients, provide much of the basic material for analysis and constitute the major sources of controversy.

Such matters as monetary and fiscal policy, whether dealt with as more or less self-contained segments of investigation or in relation to the maintenance of economic stability at a high level of production and employment, involve existing and proposed instruments and objectives that go far beyond mere reliance upon automatic exchange mechanisms or the traditional use of the spending and taxing powers of government. Similarly, the economist's long-established convictions

concerning the fruitfulness of freedom of international trade and investment have come to be conditioned, in light of the disruptive and depressing effects of recent trends to economic autarchy, by the efficacy of institutional arrangements for international economic coöperation. Not only must consideration be given to the purposes and probable results of such emerging world agencies as those for monetary stabilization and economic reconstruction and development, but the solution of numerous related problems is likewise dependent in large measure upon concert of action. Problems of commercial policy, capital movements, cartel arrangements, commodity agreements, technological restrictions, shipping adjustments, agricultural relationships—whether ostensibly attacked as matters primarily of national concern or frankly viewed in their international implications as well as in their domestic aspects—must necessarily be recognized as intricate problems of public policy. They embrace the distinctive economic circumstances of foreign areas as well as our own needs and aspirations; they are complicated by a diversity of national and international goals; they involve much more than the mere analysis of economic factors in terms of established economic principles.

And our concern with matters of policy is equally clear in most of the remaining subjects of discussion. The reëxamination of the outlook for effective competition, after more than a half-century of checkered governmental effort to this end, not only necessitates a consideration of the vitality of contemporary competitive rivalry and the feasibility, under prevailing circumstances of ownership and control, of relying predominantly upon the free operation of economic forces, but raises also crucial questions of principle and practice bearing upon the definition and maintenance of competitive conditions, and brings to issue the rather perplexing relationship between competitive policy and positive measures of collective enterprise and public control. These affirmative policies, furthermore, even when confined to such so-called naturally monopolistic industries as railroads and public utilities, require constant and informed appraisal, in the interest of evolving regulatory standards and expedients which in terms of actual performance are effectively adjusted to the changing circumstances and conditions of our economic development. The prevailing status of labor relations has likewise been molded in large measure by governmental activity. The strengthening of labor's position, as a result of statutory and administrative implementation of its right to collective bargaining through freely chosen representatives, has aroused deep concern in many quarters over the monopolistic potentialities of vast labor organizations; and the use of immense economic power by these organizations, through resort to the strike weapon as the culminating phase of abortive collective bargaining

procedures, has disclosed serious gaps in public policy and need for supplementary enactments to facilitate the adjustment of labor disputes. Finally, reliance upon public planning, for the purpose of stabilizing economic activity, eliminating mass unemployment, furthering the full use of productive resources, and increasing the flow of real income, demands at every turn incisive exploration of both existing and proposed governmental policies and practices.

In all these spheres, and in many others, there is manifest need for focusing informed economic opinion upon the policy problems involved; and in light of the great diversities of view that appear to prevail among economists, methods and procedures are being developed by the American Economic Association for coöperative definition of areas of agreement and disagreement, so that professional knowledge and insight and understanding may exert their appropriate influence in fashioning the character of the institutions and arrangements which condition or govern economic behavior.

II

Nor is this concern with policy problems either a new development or a mere reflection of the special interests of particular program-builders. The American Economic Association was organized in 1885, after a modest start had already been made, chiefly by the states, in the field of public control of economic activity. It was born immediately before government regulation, apart from tariff policy, first emerged on a national basis through the adoption of the act to Regulate Commerce in 1887 and the Sherman Anti-Trust act in 1890. In these circumstances, and in view of the generally recognized scope of modern political economy, it has been within the tradition of the Association from the beginning to be concerned with the nature and purposes and effects of government intervention in economic matters, not only with a view to achieving better understanding of the functioning of the economic order, but also in the hope at least, so frequently frustrated in the classic case of the tariff, that informed opinion might provide some measure of guidance in the evolution of public policy.

As long as governmental activity confined itself for the most part to imposing piecemeal restraints and special obligations upon particular aspects or segments of business enterprise, for the purpose of eliminating or mitigating specific abuses, policy questions were largely investigated by small groups of economists, acting within limited spheres, as mere incidents to the adequate cultivation of their respective specialties. This approach prevailed even in connection with the comprehensive affirmative controls over rates, service, finance, and related matters which were gradually developed in the public service

industries,[8] and it was also measurably characteristic of the policies of credit control which resulted from the establishment of the Federal Reserve System, despite the more direct relationship of such control to the operation of the economy as a whole. But with the accumulation of a vast mass of controls in course of the years, however miscellaneous in character and lacking in coördination, most economists came to be intimately concerned with a considerable variety of expressions of public policy; and of more far-reaching importance, with the assumption during the great depression of positive governmental responsibilities, of diverse types, for increasing economic activity and maintaining economic stability, virtually all economic inquiry came to involve, and to be conditioned by, issues of public policy. This situation has been further sustained by government domination of economic activity during the war years; and on a more enduring basis, by the well-nigh universally accepted objective of striving for sharply increased production and employment and well-being, as compared with the best of pre-war achievements, for the years that lie ahead. These more recent phases of economic policy have ushered in important changes in the kind as well as in the extent of relevant public controls. When economists were chiefly preoccupied with cost-price factors, operating in freely competitive markets, as means of achieving automatic guidance of the utilization of resources and apportionment of income, economic analysis could concern itself with policy matters only in an incidental way; for in these circumstances public policy, except in special situations, was merely directed to maintaining the framework of private enterprise. But when, with depression and war, resort was had to many direct controls, of positive bearing upon the development of production and distribution, policy issues came to pervade the entire field of economic investigation; and the far-reaching problems involved are being carried forward into the period of post-war readjustment.

For the past decade and a half economists have struggled intensively with the inherent complexities and practical difficulties of economic policy. They have played a necessary and important rôle in government itself, and they are likely to continue to do so on a substantial scale. Their influence, in and out of government service, may be fruitfully exerted for both the relaxation and the extension of controls, depending upon the specific character of prevailing and projected governmental measures. It is of the very nature of public policy under democratic institutions that it is fashioned out of a wide diversity of views, even among experts; and in these circumstances large areas of disagreement, involving in major degree conflicts of judgment rather than differences as to fundamentals, are bound to persist. But most economists, repudiating with the vast majority of men and women the defeatist notion of the

futility of human effort, share the common determination, as economists as well as citizens, so to mold our economic arrangements, through appropriate combinations of individual initiative and collective control, as not only to safeguard the meritorious accomplishments of the past, but to eliminate current maladjustments of major significance and to move forward to new horizons. Our professional discussions of economic policy are the counterpart of the widespread concern with policy matters voiced through innumerable channels in the community at large, and they tend to reflect the dominant interests of economists in the contemporary scene.

III

While it is a commonplace that public policy in economic affairs is the result of the interaction of a great diversity of factors, discussions of policy problems are all too frequently confined to the narrow limits, more or less technically defined, of the particular issues immediately under consideration. Not only are related economic elements of offsetting character sometimes ignored, but non-economic considerations are often deemed to be altogether irrelevant. The age in which we live is one of specialization; and because of the enormous expansion of the field of knowledge, specialization naturally prevails in the intellectual sphere as well as in other aspects of our highly developed social arrangements. Immense good has issued of course from the labors of experts in restricted segments of the broad realm of science and thought. Without intensive activity by specialists in narrowly limited spheres of investigation, the sweep and rapidity of our progress to knowledge and understanding would be seriously impaired. In our own field, resort to specialized, detailed, and incisive analyses of economic conditions and of the interplay of economic forces is clearly indispensable. But controlling reliance upon sharply departmentalized results, both within and between special fields of inquiry, has its serious drawbacks, particularly in relation to the development of public policy. For the latter purpose the most pressing need, aside from the assembly of adequate data and their subjection to competent analysis, is for intelligent and balanced synthesis of the numerous and often conflicting factors involved. On the economic front, despite the constant pulling and hauling of special groups for special advantage, the problem of the effective functioning of the industrial system as a whole, particularly from the standpoint of the optimum utilization of material and human resources without serious interruption, has tended to constitute since the great depression the dominant concern of economic policy; and this concern, if it is to issue in fruitful social adjustments, calls for integrated knowledge and integrated thinking.

Furthermore, when the organization and operation of the social order are viewed in the large, there is considerable kinship between the underlying objectives of economists, sociologists, political scientists, and students of the law. All are devoted to acquiring knowledge and insight concerning human relationships as they develop within the framework of organized society, with a view, in part at least, to advancing the general welfare as reflected from time to time in the unfolding aspirations of the community. Each group deals with distinctive aspects of social process, and each relies upon special expedients and techniques; but the results of their explorations are part of a closely interrelated whole. When these results are translated into institutional arrangements through policy measures, those charged with responsibility for the adoption of such measures cannot escape resort to coördination, and they are as greatly in need of informed guidance in this aspect of their labors as in having made available to them adequate and soundly interpreted basic data in each distinctive sphere. This need of skilled and disinterested coördination is all the more urgent because scientific methods and scientific results can at best be only crudely approximated in the field of social relations. Means and ends and the values conditioning them are in process of constant flux; relevant data are always less than complete or current; human beings display vigorous opposition to controlled experimentation; the range of predictability is sharply restricted; the pertinent variables are so extensive as to result inevitably in wide differences with respect to diagnoses and cures; and consideration must be accorded to ultrarational or even irrational factors as well as to those assumed to be grounded in reason. It is in such circumstances that legal arrangements in the field of economic policy are evolved.

IV

Public control of economic policy is predominantly crystallized into law. Aside from the ultimate control assumed to be exercised by the consuming public in a free market economy, there are, of course, numerous informal public controls, consciously applied for the most part, unless condemned by law, through the great variety of voluntary associations into which our society is organized. The development of a spirit of private restraint and a sense of public responsibility on the part of major economic interests, whether acting independently or through such associations, might well serve to minimize the need of government intervention. But neither reliance upon automatic processes nor the beneficence of voluntary action has proved to be an adequate instrument for the elimination of specific economic abuses or the achievement of constructive economic purposes. In these circumstances

there has long been resort to governmental authority, in one sphere or another, to protect particular interests or advance general well-being. It is the complex of legal powers being exercised or sought which brings to issue the outstanding controversies of the day in the field of public policy. It is our prevailing system of law, the aggregate of governmental prohibitions and requirements imposing restrictions upon private enterprise and fashioning its character and direction, which raises such fundamental questions as the appropriate scope of the obligations of government to further economic welfare, the relation between freedom and authority in the achievement of fruitful economic results, the outlook for the preservation of democratic institutions in the milieu of extensive public control of economic activity.

This legal system not only embraces the large accumulation of juridical principles and practices sanctioned or evolved at common law in the piecemeal adjudication of disputes concerning the rights and duties of private litigants, but includes also, more significantly for our present purposes, the enormous mass of legislative enactments and administrative determinations—federal, state, and local—which, upon surviving the possibility of judicial censorship on constitutional grounds, play an important rôle in the governance of economic behavior. While this body of enactments and determinations, as interpreted by the courts, has modified common-law doctrines in numerous ways, its most far-reaching contribution lies in positive supplementation of the common law, through the establishment of standards and the enforcement of policies designed to safeguard and promote the common good. However adverse a reaction may be justified to the wisdom or propriety of particular measures, the basic objectives of the legal system as thus developed reflect a popular determination to improve economic conditions, within the general framework of private enterprise, and a faith in the efficacy of collective control.

Law as such evokes no opposition whatever in our midst, even from those who are most firmly convinced that the contemporary expansion of the legal system is calculated to destroy or subvert our economic and political institutions. Indeed, insistence upon the supremacy of law is voiced most uniformly and most vigorously by those who are generally inhospitable to restrictive change effected through collective action. But the law thus approved is primarily that which strengthens the very industrial setup which is in course of modification—the legal rules and practices designed to protect property rights, enforce contract obligations, provide monetary mechanisms, sustain corporate activity, define bankruptcy procedures, reward creative accomplishment, perpetuate special privileges. Even in these spheres, however, which have constituted the traditional legal foundations of economic conduct, a

process of continual development, in response to social pressures resulting from practical maladjustments of all sorts, is both necessary and unavoidable; and with the intensification of public consciousness as to desirable ends and appropriate means, more positive objectives are constantly emerging and being implemented—the powers and opportunities which inhere in our political democracy are being utilized not only to advance special interests, but to further the deliberate attainment of more general economic well-being.

The labors of economists would proceed on an unrealistic basis, and would tend to be sterile in many respects, if adequate heed were not given to the legal environment in which economic enterprise is organized and economic forces operate; but it is even more important that the controlling system of law should reflect adequately the economic environment in which its rules and standards and policies are applicable. If law is to serve as a living instrument for the guidance of human relationships in the economic sphere, it must necessarily embrace a process of reasonable adjustment to social change; and, in point of fact, the relative stability of our institutions is attributable in large measure to the actual recognition of this principle of growth in our legal system. Despite the existence at times of significant conflicts between law and economics, involving especially undue lags in the development of constitutional doctrine, even the large mass of common-law rules has been fashioned progressively, though slowly, to accord with the demands of our dynamic society; and the major measures of economic policy which find expression in legislation and administration have come to constitute an integral part of the prevailing body of law. By and large, at least as of the present, the growth of our legal system is not being artificially or unduly restricted by the individualistic traditions which surrounded the early development of modern industrialism.

V

Both prevailing and proposed economic policies must be judged on their merits, in light of all conditioning circumstances; and on this basis economists have much to contribute toward the development of sound and effective policy measures. The immediate sensitiveness of economic conduct to indirect and remote influences, as well as the long-run economic consequences of controls, must of necessity receive informed consideration; and reasoned emphasis upon the broader implications of economic policy, in their bearing upon our entire institutional setup, also possesses a large measure of persuasive pertinence. In other words, we must not permit ourselves to drift into an essentially collectivistic economy. But when opposition to policy measures is voiced in extreme terms—when virtually all significant

proposals are attacked as fundamentally subversive of our cherished heritage—the adoption of needed controls is sometimes retarded, and what is even more important, the controls actually incorporated into our legal system tend to be largely molded by their militant proponents, whose advocacy is often equally extreme in the sweeping constructive expectations which it holds forth. Since the precise character of controls and the procedural safeguards surrounding them are not infrequently more important than the mere fact of their establishment, this approach comes to be a self-defeating one on the part of the regulated interests, and the community at large tends to be deprived of the balancing influence of those most immediately concerned and most intimately acquainted with the complexities involved. It is one of the striking facts of our economic history that, except in grave emergencies, commercial and industrial interests have stubbornly opposed practically all restrictive or positive control measures of importance, usually on what they professed to be fundamental legal and economic grounds, however readily they may subsequently have adjusted themselves to the new environment created by these measures. Among the more comprehensive considerations that have thus been invoked in obstructing and impairing the development of economic policy are those reflected in relatively unrelieved stress upon the maintenance of individual freedom, in condemnation of government as a virtually unmixed evil, in repudiation of politics as a necessarily maleficent activity.

There is a substantial parallelism between undue emphasis upon national sovereignty in international relations and a similar overemphasis of individual freedom in domestic relations. Both are expressions of a basic isolationism in face of closely knit and interdependent conditions of social living. There can be no question that freedom from restraint, whether it be the external restraint of alien states or the internal restraint of domestic governmental authority, is among the most fundamental of our values and is largely responsible for our fruitful accomplishments. But untrammeled freedom of action has never prevailed in either sphere. It has always been recognized that both national and individual liberty, if allowed uninhibited sway, are themselves likely to generate serious restraints, and that deliberate restrictions may be necessary to achieve the largest measure of attainable freedom. National sovereignty has not precluded ready acceptance of the numerous self-imposed limitations contained in compacts or treaties negotiated between states, nor has the individualism of our system of private enterprise precluded the collective establishment of numerous controls. When achieved through democratic processes, in response to demonstrated general need, these measures of economic control tend to implement and enrich individual freedom, just as

mutually advantageous international agreements constitute concrete expressions of sovereignty rather than its denial.

We are now in the midst of a determined quest for durable peace among nations and for economic security at home, and in connection with this far-reaching effort the institutional implications of collective control have come to sharp focus. But there appears to be no justifiable basis for assuming that even these objectives are necessarily in conflict with the maintenance of national sovereignty or individual freedom. The goals are more positive and comprehensive than any previously sought on so broad a foundation of popular support or with like insistence, but they are being pursued for the most part within the established structure of political nationalism and economic individualism. Effective removal of the menace of war is essential to the constructive fruition of national purposes; adequate concern with continuing maintenance of a high level of production and employment is an indispensable condition of economic welfare. Collective effort toward these major ends, as generally envisaged, is but calculated to create a favoring environment for national and individual self-realization. Fortunately the obstacles to international coöperation springing from legalistic conceptions of sovereignty are rapidly dissolving. In the domestic field we are much more hesitant—for fear, basically, of undue encroachment upon individual freedom. There are, without doubt, many pitfalls and immense difficulties in interrelating soundly and fruitfully the great variety of elements, public and private, relevant to the achievement of economic stability at a prosperity level; and there is much room for controversy with respect to numerous technical questions clustering about wage adjustments, price policies, investment functions, monetary management, fiscal practices, and a host of other complex factors. But sweeping repudiation of public responsibility for economic stabilization is largely a make-believe procedure; and the ready identification of all public policies that may in some fashion be characterized as economic planning with the exercise of dictatorial power and the use of arbitrary methods—as inevitably involving authoritative allocation of resources and imposition of direct controls over all significant aspects of the economy—simply does not square with the character of prevailing non-emergency controls, or of the relatively modest proposals being sponsored, or likely to be sponsored, by any substantial and responsible segment of our polity. Such an approach leads to reliance, not upon documented economic dangers, but upon such emotion-laden and question-begging shibboleths as "regimentation" and "centralization," broadcast with little reference to the inescapable dependence of the individual upon social process, the essentially national scope of the established economic system, the reasonably reassuring actualities in

these respects of the general course of control experience. It is neither desirable nor feasible, in the complexities of modern industrial society, to restrict governmental functions to a closed category fashioned by the near-absolutes of a dead past.

Nor does greater validity attach to such strictures upon the development of public control as derive their primary impulse from want of confidence in government and politics. Governments can be and have been arbitrary, discriminatory, and tyrannical; and it is a sound instinct that seeks to restrict government intervention in economic affairs to the compelling requirements of public interest, centered upon the gradual but progressive improvement of the lot of the individual. But in a democratic society such collective requirements cannot be indefinitely ignored; and only government provides a sufficiently all-inclusive instrument to encompass and represent the entire community in the totality of its economic relations. In time of war we dedicate our lives and all our resources to a vital common end, and we rely upon government unstintingly to effectuate this end. Common ends of great significance also emerge in times of peace, and in the economic sphere control policies, molded by the specific exigencies of recurring need, constitute practical expressions of such collective purposes. Whether in peace or war, particular measures may be ill-adapted to the ends held in view, and may indeed prove positively harmful. Furthermore, the exercise of governmental authority may be impaired or vitiated by corrupt practices and inefficient methods. But such defects of government, occasionally resulting in situations sufficiently extreme to be termed scandalous, have their counterparts in the administration of private business enterprise; and in any event, the remedy lies in the improvement of government in all its various branches—a widely recognized need which becomes increasingly urgent as the scope of public control is expanded—rather than in the artificial restriction of governmental functions.

And like observations appear to be justified with respect to reliance upon the shortcomings of politics as a ground for resisting necessary controls. The unlovely aspects of politics are common knowledge and need not be detailed here. Improvement in political methods is as essential as improvement in government as a whole. But in considerable measure politics is government in action; and politics can no more be wished out of existence, or be regarded as an inherent obstacle to the adoption of needed control measures, than government itself. Moreover, the significant constructive services rendered by politics in the sphere of policy-making are generally overlooked. The often alarming activities of pressure groups tend in many instances to offset one another; and it is political rivalry, animated in some degree by divergent faiths and at

all events by distinctive strategies, that is largely responsible for keeping selfish interests in most cases within relatively reasonable bounds. There are, of course, fundamental issues of principle that call for uncompromising statesmanship, impervious to the temptations of political maneuvering. The maintenance of government as the servant of the people, through vigilant avoidance of policies calculated to transform the state into their master, constitutes the most outstanding of these issues and comprehends numerous matters of principle where political concessions are dangerous. Happily we have resisted the lure of totalitarianism even under the terrific pressures of the great economic breakdown and the unprecedented upheaval of world war; and with the complete military defeat of the fascist powers the climate of opinion is more inhospitable than ever to the enthronement of dictatorial authority. In most economic matters, however, there is ample room for accommodation of conflicting interests and conflicting viewpoints; and the pragmatic compromises of politics produce such accommodation. Politics thus serves as a cementing rather than divisive influence in our national life. Head-on collisions between powerful interests and extreme ideologies are thereby averted, and opportunity is afforded for resort to limited and tentative expedients, often instituted on an experimental basis, which are subject to progressive modification as practical circumstances may require. The trial-and-error methods by which the Interstate Commerce act and the interpretation and application of its provisions have been evolved over a period of almost six decades furnish a striking illustration of this pragmatic approach; and similar methods have characterized for the most part the development of control policies in all spheres of economic activity. Needed change may be somewhat retarded in this way, but it tends to assume the form of much more orderly and realistic adjustments than if pursued as a quest for uncompromising ends, to be effectuated in full-blown maturity by single impulse. In this fashion the very political activity which is so often feared and so generally condemned has contributed significantly, despite the accumulation of controls, to the preservation of the essential attributes of the system of private capitalism.

VI

But perhaps the most common alarm over the influence being exerted upon the system of private enterprise by the development of public control finds expression in the contention that we are relinquishing our liberties to an all-pervading "bureaucracy." This characterization of governmental policies as bureaucracy is obviously a mere use of epithet, designed to cast discredit upon existing and proposed control measures, rather than an objective description of regulatory procedures.

Indeed, one is seldom given any inkling as to what constitutes the essence of bureaucracy, or where the line may be drawn between legitimate and bureaucratic governmental activity. For the most part the charge of bureaucracy but epitomizes over-all recalcitrance to control, lumping in a single blast of condemnation the great variety of considerations, largely substantive in character, which usually impel attacks upon government intervention in the economic sphere. Much of the distrust is based, of course, upon justifiable complaint against inefficient administration resulting from poor choice of personnel and lack of discipline, against slowness of action arising from cumbersome and hierarchical assignments of responsibility, against self-perpetuating and self-aggrandizing activities of public appointees. As already noted, removal or mitigation of such governmental and political defects is, and should be, a matter of deep concern. But aside from these general strictures upon government and politics, and to the extent that regulatory processes rather than the policies to be enforced are at issue, it must be assumed that the critical emphasis upon bureaucracy springs from the fact that our prevailing governmental establishment operates predominantly in economic matters through boards, bureaus, and commissions. From this standpoint it is the administrative method of control, as reflected in the nature of the major regulatory agencies, which is assumed to threaten our liberties.

Administrative tribunals have come into being and have expanded with the years because they provide "working implements of government," to use a phrase of Chief Justice Stone, which are indispensable to the successful attainment of regulatory ends. Exclusive reliance upon the courts would but give effect to customary common-law rules, constituting a virtual abdication of positive policy making in face of urgent need of control in many directions; and even within these narrow limits such judicial activity would result in the mere provision of private redress for past infringements upon prevailing obligations, rather than in the affirmative establishment of such relationships as are deemed to be required in the public interest. In these circumstances resort to statutory enactments has been a necessary and natural expression of democratic objectives in the complexities of the modern world. But direct legislative regulation, enforceable in the courts, while entirely appropriate where concretely definable prohibitions are involved, is likewise beset with vitiating difficulties in most instances. Legislatures do not possess the necessary competence to deal in detail with the numerous and intricate economic matters over which they may exercise jurisdiction. Many practices subject to control—such as unfair methods of competition and unreasonable or unjustly discriminatory rates and charges—are not adequately definable, even as prohibitions, without

reference to the facts of individual situations. When remedial ends are being sought, as in most aspects of contemporary control, legislative policies must be adapted to a tremendous diversity of circumstances and conditions. And direct legislative controls, however soundly formulated in the first instance, would tend to issue in harmfully rigid adjustments. It is because of such factors that the administrative tribunal has come to be utilized as the dominant instrument of regulation. Basic policies and guiding standards are prescribed by the legislature; but the task of translating these policies and standards into specific regulatory requirements is entrusted to administrative commissions, fuctioning continuously and aided by technical staffs, which promulgate their orders, after notice and hearing, on the basis of factual records as developed in each proceeding, and whose determinations are subject to judicial review. While there are minor variations from these primary characteristics among the many permanent regulatory bodies now operative, and while the pressures of emergency situations have temporarily induced procedural short-cuts as well as extraordinary extensions of public authority, this type of agency constitutes the established norm for the control of economic conduct.

It is important to remember that this method of administrative regulation represents no new device fashioned during the recent period of intense control activity. State commissions with mandatory power over railroads were first established in the 1870's; and in the federal sphere the Interstate Commerce Commission, the most powerful of all our peacetime administrative agencies exercising direct economic control, dates back to 1887. The creation of this commission constituted a deliberate Congressional choice over the alternative method of legislative regulation, and the long intervening experience has but served to confirm the wisdom of the choice. While numerous controversies have developed in the course of the Commission's existence concerning the nature and scope of the substantive policies to be established for its guidance, there has been no disagreement as to the indispensability of the administrative method for effectuating these policies, and there has been no weakening of this conviction as the Commission's powers have actually been expanded in notable degree. By the time of the outbreak of the First World War, virtually all the states had constituted administrative agencies, modeled upon the Interstate Commerce Commission, for the regulation of public utilities, and the Federal Trade Commission had been established to regulate competitive practices and implement our antitrust policy in the general field of commerce and industry. By that time, furthermore, a full generation ago, the developing system of administrative law had been absorbed without serious difficulty into our over-all legal framework. This was accomplished by a

Supreme Court, under the leadership of Chief Justice White, which in the contemporary disposition to affix labels would generally be deemed to have been conservative. Not only were attacks upon the regulatory commissions on the ground of unconstitutional delegation of legislative authority successfully repelled, but by the adoption in self-denial of a narrow judicial review, the courts gave full effect to the large grants of administrative discretion vested in these agencies. It was recognized that the ever-present conflict between rule and discretion, arising from the need under varying circumstances of according consideration to the often divergent demands of certainty and of justice, is characteristic of judicial as well as administrative determinations; and in view of the essential regulatory purposes being served and the manifest legislative intent that dominant responsibility for effectuating them be vested in these specialized agencies, no inherent derogation from the supremacy of law was found to be involved in the functioning of the administrative tribunals. It was this established legal doctrine that determined the status and potentialities of most of the subsequently created regulatory commissions.

The attacks upon so-called "bureaucracy" as a process of control spring chiefly from fear of the exercise of arbitrary power. When adequate safeguards are provided against unjustifiable or capricious action, it is the control policies themselves rather than the methods of their execution that are really brought into question; and in our system of administrative regulation such safeguards are in fact provided in a good many ways by the legislatures, the agencies themselves, and the courts. The regulatory commissions are created by the legislatures, and their very existence, no less than the sufficiency of their resources, is constantly subject to the legislative will. The fields of their operation and the scope of their power, including applicable policies and standards, are expressly prescribed. Responsibility for proper performance of their regulatory functions runs directly to the legislatures, with provision for periodic public accountability to them. The entire structure of control in each sphere is thus subject to continual modification on the basis of experience. In the exercise of their authority, furthermore, the regulatory agencies are generally required to provide due notice to all interests involved and to afford them full and fair hearings. These agencies are frequently referred to as quasi-judicial tribunals, because, as an incident to the performance of their primary function of prescribing arrangements for the future, they necessarily pass upon the propriety of existing adjustments. Much more important is the fact that they usually follow quasi-judicial procedures. These procedures arouse dissatisfaction on the part of those who impatiently seek quick results through summary action, but they

provide necessary assurance that all relevant private rights and interests will be accorded due consideration in the fashioning of determinations deemed to further the public good. The validity of these administrative determinations, finally, is subject to review by the courts. While judicial review generally confines itself to mere questions of power, and does not seek to substitute the judgment of the courts for that of the regulatory bodies, it provides effective safeguards against unconstitutional assertions of power, both in the governing legislative policies and in the resulting administrative orders, against exercise of administrative authority not supported by valid interpretation of the pertinent statutory enactments, and against abuse of administrative discretion effected through any failure to adhere to due process, broadly conceived, as evolved in the established traditions of the law. The regulatory agencies are thus kept within the bounds of legitimate authority deliberately vested in them. Arbitrary power and arbitrary action are both alien to the prevailing peacetime system of administrative regulation.

Under such a system, however, it is a matter of crucial importance that the independence of the regulatory agencies be meticulously maintained. Only in this way can the characteristic advantages of the administrative method be realized. It is especially necessary that these tribunals be not dominated by political pressures. Political influences have their proper place in the development of guiding policies through legislative action; but in the execution of these policies as established by law, the responsible administrative bodies must be free to reach determinations based entirely upon their own informed judgment. Such freedom from external influence or control is as essential in this sphere as in case of the determinations of the courts. It conditions the attainment of just results in particular proceedings and the preservation of needed confidence in the regulatory process as a whole. The established setup is in point of fact one of independent commissions; and when political interference makes itself felt, as it does in a variety of ways from time to time, it at least tends to evoke adverse popular reactions, because of manifest departure from the generally accepted norm of administrative independence. The plausible proposals that are put forward recurrently for the absorption of the regulatory agencies by the regular departments of government constitute a much more serious threat. It would be difficult, in such a setup, to divorce specific administrative determinations, no less than general matters of guiding policy, from the political objectives of the party in power; and in these circumstances the orderly safeguards against arbitrary or capricious action which have been laboriously developed over the years would tend, as a practical matter, to be seriously impaired. A like danger

appears to lurk in proposals for instituting special-interest representation on the regulatory agencies themselves, as in case of the tri-partite board for handling labor disputes and wage stabilization during the war period. However helpful this form of organization may have proved to be in facilitating the disposition of industrial conflicts in the special emergency situations with which we were then faced, it did not contribute to the maintenance of orderly processes or the development of enduring principles. All interests involved in regulatory proceedings should, as a matter of course, be accorded full opportunity to present evidence and argument bearing upon every aspect of the problems at issue; but since the very fact of government intervention springs from the recognition of a general interest that transcends the special interests of the parties, the process of decision should be entrusted exclusively to public representatives. In other words, internal as well as external pressures may constitute an impediment to the maintenance of genuine administrative independence.

But in the last analysis the most far-reaching safeguards against possible excesses of public control, whether they be substantive or procedural in character, lie in the preservation of the democratic environment of governmental action. Important control policies usually draw their initial impetus from expressions of popular dissatisfaction with existing conditions. At least in general terms proposed measures tend to be discussed in political campaigns and to bear upon the fortunes of political parties and candidates. In due course they are investigated by legislative committees and debated in the law-making chambers. After control measures are adopted they are likely to be tested in the courts as to their constitutional validity and legal scope. They are then executed and enforced by the regulatory agencies, generally under quasi-judicial procedures, and the findings and conclusions of the investigations are public records. Individual determinations and directives are subject to judicial review, for abuse of administrative discretion, and the entire regulatory performance is subject to virtually unrestricted legislative inquiry. When patent improprieties or unacceptable results emerge, the law-making bodies have constantly recurring opportunity to reverse or modify or expand prevailing policies and practices; and the whole deliberative cycle may again be brought into play. After due allowance is made for the large measure of unreality that often characterizes public discussions of public issues, as well as for the obstacles to relinquishment of established control arrangements that derive from vested governmental interests, serious errors of economic policy cannot in the long run withstand the pressure of these democratic processes. As long as we exercise the necessary vigilance to preserve without impairment our political liberties, includ-

ing free and frequent elections, and our civil liberties of freedom of thought, of speech, and of the press, there is little likelihood that the course of government intervention will be permitted to subvert our essentially individualistic economic order.

The chief purpose of these observations has been to direct attention to some of the factors that obstruct the approach to policy problems. The ends sought are of vital significance, and the tasks actually to be performed are many and difficult. Despite the movement for public control, long in the making and far advanced in many directions—perhaps because of it—our economy remains the outstanding expression of private enterprise in the world of today. There is a deep-rooted faith in the system and a widespread determination that it be preserved. It is doubtful whether prophecies of doom are any better founded for the future than they have been in the past. There appears to be good promise that freedom and authority can be so harmonized as to promote economic well-being without sacrifice of essential values.

NATIONAL BUDGETS AND NATIONAL POLICY

By Jacob L. Mosak*

I. *The Need for a National Full-Employment and Full-Production Policy*

A number of economic models relating to the national budget recently developed on the basis of pre-war income and expenditure patterns have demonstrated that severe depression in the years immediately following the transition period is highly probable in the absence of a national policy to assure full employment. From these models the economists have concluded that in the post-war period (1) national policy must be directed toward changing the income and expenditure patterns so as to increase private expenditures for consumption and tangible investment, and (2) the federal government must assume the responsibility of adjusting its own outlays and revenues so as to maintain aggregate expenditures on goods and services by both government and the private economy at the level required for full-employment production.

The logic underlying these models will be indicated in a later section. The conclusions derived from the models may, however, be arrived at in a very simple manner. In 1944 and the first half of 1945, the American economy produced at an annual rate of about 200 billion dollars of finished goods and services for consumption, business investment and government use. Both the labor force and the output per manhour have been subject to conflicting influences during the war, some of which have tended to raise and others of which have tended to lower the gross national product. There is widespread agreement, however, that when these wartime influences are eliminated, the American economy, in the years immediately following the transition period, will be able to produce the same total volume of goods and services as it did at the peak of the war effort. Our capacity to produce in 1950, in other words, will be about 200 billion dollars gross national product in 1944 prices, and it will steadily increase thereafter as a result of population growth and increases in productivity.[1]

* The views expressed by Mr. Mosak are his own personal opinion and do not necessarily reflect in any way those of the Office of Price Administration.

The author is indebted to the following persons for their very careful reading of the manuscript and their many helpful suggestions: Henry S. Bloch, Benjamin Caplan, David W. Lusher, Richard A. Musgrave, Mary Smelker and Arthur Smithies.

[1] The problem of measuring peacetime output in terms of prices of the year 1944 when war expenditures were about half the total gross national product is an extremely difficult

While the capacity to produce will continue at peak levels, government, the largest customer for the national product, a customer which in wartime took one-half of the total, will reduce its orders by about three-fourths. Can markets be found for the 75 billion dollars of gross national product which the government will cease to buy? Can the private economy reasonably be expected to increase its outlays by three-fourths from its present all-time high level? Let us consider the probable changes in private investment and consumer expenditures.

1. Private investment in housing, plant and equipment, inventories and foreign lending was curtailed during the war. In the peak years, 1929 and 1941, private investment was just under 20 billion dollars whereas it amounted to only 4.5 billions per annum in the first half of 1945. Considerations of past rates of investment, as well as of the present productive capacity of our economy, indicate that the average rate of investment over a period of years in the foreseeable future will not very much exceed the peak reached in a single pre-war year.[2]

2. Expenditure on consumer goods and services, though higher than in pre-war years, was lower than it would have been at the high wartime levels of income because of shortages, price control and other factors. Consumer durable goods expenditure reached a peak of about 10 billion dollars in 1941, but fell to an annual rate of about 7 billions in the first half of 1945. It may be expected to rise from present levels by some 10 billion dollars per annum. Expenditure on food, clothing, gasoline and consumer services was also curtailed by 5 billions or more per annum at wartime levels of income as a result of shortages. The expenditure on goods has risen relative to disposable income in the first few months of the transition period, and the expenditure on services may also be expected to rise as the supply of services increases. This, however, cannot as yet be taken as evidence that in the post-transition years the total demand for consumer goods and services will be significantly higher in relation to disposable income than it was prior to the war.

3. Taxes at the peak of the war effort were about 25 billion dollars higher than they would need to be after the war if full employment

one. The comparison is somewhat easier in terms of the prices of the factors of production —wage rates and the markup over wage rates—than it is in terms of the prices of the finished product.

For the author's projection of the post-war capacity to produce, see his "Forecasting Postwar Demand," *Econometrica,* Vol. 13, No. 1 (January, 1945). For summaries of the projections of various estimators in the field, see E. B. George, "Gross National Product Projections: The Background and Relation to Current Issues," *Dun's Rev.,* (March, 1945), pp. 9-14; and E. E. Hagen, "Postwar Output in the U. S. at Full Employment," *Rev. Econ. Stat.,* Vol. XXVII, No. 2 (May, 1945), pp. 45-59.

[2] This conclusion does not necessarily commit one to the "mature economy" thesis, since it carries no implications about the rate of investment in the distant future.

could be maintained with government expenditures of only 25 billions. A 25-billion-dollar reduction in taxes would certainly increase private expenditures substantially, but undoubtedly by less than 25 billions since a portion of the remitted taxes would serve to increase private savings.

When all these factors are taken into account, however, it is evident that they add up to considerably less than 75 billion dollars of additional private consumption and investment per annum over a period of years. Since any initial deficiency will have repercussions on other private expenditures, the gross national product will fall by considerably more than the initial deficiency. Unless, therefore, the federal government adjusts its revenues and outlays so as to raise the annual aggregate volume of expenditures, both government and private, to the level required for full-employment production, it is evident that mass unemployment and depression will follow. The conclusion is that the government must assume the responsibility and prepare a program to eliminate the deflationary threat of the post-war period.

II. *Controversy on Policy*

Dr. Albert G. Hart of the Committee on Economic Development has recently attacked the post-war models in the pages of this journal. His criticism relates to both the model-systems and the policy recommendations of the model-makers.[3] Indeed, although most of his comments are directed against the model-systems, I think it is a fair inference that they stem largely from his objections to the policy recommendations.

Before considering the objections to the policy recommendations, it is worth emphasizing that Hart's criticisms of the model-systems relate only to the question of the adequacy of demand for the potential post-war output. He evidently now agrees that 200 billion dollars is a con-

[3] "Model-Building and Fiscal Policy," *Am. Econ. Rev.*, Vol. XXXV, No. 4 (Sept., 1945), pp. 531-58. This article includes practically all of the criticisms that I have seen to date against the model-systems.

It should be clear that in accepting Hart's terms "model-makers" and "model-builders," to refer to the particular economists whose views he is criticizing, I am not dividing economists generally into model-builders and anti-model-builders. Model-systems are mathematical tools of analysis designed to derive consistent sets of conclusions from stated assumptions. They are useful tools for all economists, Keynesians and anti-Keynesians alike. Hart himself is a model-maker.

The model-makers singled out by Hart for criticism are as follows: National Planning Association, *National Budgets for Full Employment* (Washington, March, 1945); "Forecasting Postwar Demand" (papers by Morris Livingston, Arthur Smithies and Jacob Mosak, in *Econometrica*, January, 1945); the Appendix (C) by Nicholas Kaldor in Sir William Beveridge, *Full Employment in a Free Society* (New York, 1945); and R. A. Musgrave, "Alternative Budget Policies for Full Employment," *Am. Econ. Rev.*, Vol. XXXV, No. 3 (June, 1945), pp. 387-400.

servative estimate of the capacity gross national product for 1950. For he estimates the capacity in 1947 to be 186-195 billion dollars in 1944 prices.[4] Allowance for normal increases in both labor force and output per manhour would raise the *lower* end of the range to about 200 billion dollars in 1950. Hart's acceptance of this estimate of our productive capacity represents a great forward step in the clarification of the problem connected with the maintenance of post-war full employment.

A. *Inflation* vs. *Deflation*

The primary objection raised against the recommendations is that they take a one-sided view of the post-war prospects. Hart admits that deflation may be a threat during the next 10 years and probably during the next 5 years, but he maintains that it would be irresponsible to overlook the inflationary dangers in sight for the transition.

I do not believe that the model-builders can be fairly charged with irresponsibility on the inflation front. The American model-builders in question have all participated in helping to prepare and execute the Administration's program to keep inflation in check. They have all emphasized the dangers of price inflation during the earlier part of the transition period. They have, in fact, been accused of desiring to keep price and other anti-inflation controls needlessly during the reconversion period. It is one of the curiosities of our day that many of the economists who have been ridiculing the predictions of the post-war deflationary threat are the very ones who have been pressing for the immediate abolition of price controls.[5]

Even the model-builders who emphasized the threat of *deflation of income* resulting from the reduction in munitions employment, the elimination of overtime and the downgrading of workers insisted that there was simultaneously a threat of *price inflation* in the transition period as a result of the accumulated shortages of housing, consumer durables and other goods and services which would remain short even at the lower levels of income. Although the model-builders supported the movement for increasing wage rates to counteract the threat of income deflation, they exerted every effort to confine collective bargaining for wages within the framework of the price-stabilization program. Their thesis was the same as that advanced by President Truman, namely, that it was possible to increase wages substantially without corresponding price increases. This program required the Administration to assume

[4] M. G. de Chazeau, A. G. Hart, *et al.*, *Jobs and Markets*, Research Stud. for the Committee for Econ. Development (New York, McGraw-Hill, 1946), chap. 2.

[5] I am glad to say this is not true of Hart.

a calculated risk, but the risk was no greater than that proposed by Hart in his recent Study for the C.E.D. in which he wrote:

> While it lasts, price control must be streamlined and liberalized. The OPA must follow a course of "calculated risk" in suspending controls. Price ceilings must be adjusted if they seriously deter or distort production. Pricing standards should permit the average profit expectations of normal prosperity. The present "earnings" standard for price relief—the 1936-39 average return on net worth, before taxes—should be raised by about one-third. Increases should also be permitted whenever the price of a product fails to cover average total costs of production and not, as at present, average direct costs only. All price adjustments under these standards should be based on actual cost experience of the most recent quarter of "normal" operations, without distinction between "approved" and "unapproved" wage increases.[6]

If the model-builders did not refer to the danger of price inflation in the transition, it was simply because they *explicitly* confined their analysis to the years *following* the transition. For the post-transition period they are agreed that the major threat is depression and mass-unemployment rather than inflation.

B. *The Need for Flexible Policy*

In the light of the past fluctuations in economic activity, it is apparent that fiscal and indeed all national economic policy must be sufficiently flexible to counteract either booms or depressions. Hart presents his recommendation for a flexible fiscal policy in such a way as to imply that the model-builders are either opposed or at best indifferent to it. This is a mistake. The model-builders are certainly in favor of a flexible fiscal policy to counteract cyclical fluctuations. The issue is only whether there is also need for a national policy designed to prevent continued unemployment. A flexible fiscal policy, it has been aptly said, corresponds to putting in a properly balanced steering wheel, whereas a policy to prevent continued unemployment corresponds to improving the basic structure of the car. The model-builders want both, whereas their critics appear to be content only with the first.

C. *Fiscal* vs. *General Economic Policy*

Although the model-builders have emphasized the need for a comprehensive national policy to maintain stable full employment, the belief is widespread that they are interested only in public spending. The origin of this belief is not difficult to trace. The analysis of the model-builders is Keynesian in the broader sense, and Keynesian

[6] De Chazeau, Hart, *et al.*, "Summary of Key Recommendations" in *Jobs and Markets*, paragraph no. 2.

theory to the non-critical observer is synonymous with public spending.

It is true, of course, that Keynesian analysis provided the theoretical framework for the justification of the public spending program in the depressed 1930's. Nevertheless a moment's consideration should suffice to refute the charge against Keynesian theory. First, even in the 1930's, public spending was only one element, albeit to many the most dramatic element, of a much broader social and economic policy. Second, the relative concentration on public spending in the thirties was primarily due to (1) the fact that in an emergency which called for quick action, public spending could be increased more quickly than private; and (2) that the country was politically and socially unprepared to take many other measures which might have reduced the need for public spending.

The more our people and our government are educated to the nature of our economic problem, and the more they are prepared to take appropriate steps in raising the level of private expenditure, the less need will there be for public spending. This is in fact one of the major purposes of the analysis of the model-builders.

It is surprising that as trained an economic analyst as Hart should have been so misled by the widespread prejudice on this subject as to write: "The school of economists from which these model systems spring seems to feel that the only lesson economists need to convey to the public is that government spending can remedy depressions."[7]

That the comment just quoted is not based on any economic analysis is evident from the fact that in discussing the model-systems from a purely analytical standpoint, Hart saw clearly that the model-builders were not simply "public spenders." Thus he wrote: "These model-systems are set up on the hypothesis that the major components of the national product are determined by the scale and character of the government's fiscal operations—in a setting, of course, of relationships among the components expressing other economic forces. *This way of viewing the problem emphatically does not commit the model-builder to the assumption that government fiscal policy is the only motive power in the economy.* It merely brings a particular set of variables into the foreground for closer study."[8] (Italics mine.) It is regrettable that between his analytical and his policy discussion there should have occurred such a profound change in Hart.

D. *Deficit through Spending* vs. *Deficit through Tax Reductions*

Most trained economists—even anti-Keynesians—are now agreed that federal deficits are desirable during a depression. Hart goes further

[7] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, p. 552.

[8] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, p. 531, text and footnote.

even than most anti-Keynesian critics, because he accepts the entire Keynesian analysis concerning the effects of deficits on the national product. As will be shown later, he is more Keynesian than the Keynesians, since his major criticism against the model-builders boils down to nothing more than an objection that they estimate too small an income-multiplier for federal deficits. His argument should, therefore, provide little comfort to other anti-Keynesian critics.

The acceptance of the theoretical analysis of the effect of deficits does not mean that the dispute over the use of deficit policy to maintain full employment has been eliminated. The critics have simply shifted the dispute to the question whether the deficit should be achieved through increased government expenditures or through reduced taxation. In thus shifting their ground they have attributed to the model-builders an arbitrary distinction between the two types of deficits. They suggest that the model-builders believe only the former type of deficit stimulates employment, in contrast to themselves who believe that both types of deficits are expansionary,[9] and/or the latter type is preferable.[10] This is simply wrestling with strawmen. I know of no Keynesian, model-builder or otherwise, who believes that only federal deficits arising from abnormal public spending will increase output whereas federal deficits arising from tax reductions will not. Keynesians argued for a reduction in payroll and excise taxes as an anti-depression meaure before the war and for a strong tax program as an anti-inflation measure during the war.[11]

The choice between an additional reduction in taxation or an additional increase in government expenditures can obviously be made only in terms of their relative marginal social utilities. If there is any dispute between Keynesians and their critics on this question it is only on the relative degrees of effectiveness of a given increase in government expenditures as compared to an equal reduction in taxation. Hart states that a billion dollar reduction in taxation would lead to an initial increase in private expenditures "of roughly the same dollar amount."[12] Keynesians generally maintain that a significant part of the tax reduction would serve to increase savings rather than consumption and investment. Since the amount of government expenditures required to maintain full employment would be decreased only to the extent to which private expenditures increased, the reduction in required

[9] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, pp. 550-51.

[10] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, p. 552.

[11] In the estimates which Hart reproduces from my models, it is clearly shown that the larger the volume of tax reductions, the smaller is the amount of government expenditures and private capital formation required to maintain full employment.

[12] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, p. 551.

multiplier or in terms of the second. The first multiplier, which is smaller, is applied to government expenditures; the second multiplier, which is larger, is applied to government deficits. The two products are obviously identical.

(2) The estimate does not allow for favorable repercussions of government deficits on private investment resulting from the increase in the national product. It is certainly a change from the usual diet to see a non-Keynesian criticizing the "Keynesian school" for failing to take into account the *favorable* effects of government deficits on private investment. As has already been indicated, the investment function was omitted because of ignorance of its nature and a belief that it was unstable. Consequently, the analysis runs only in terms of the effects of an increase in the sum of government expenditures and capital formation, not of an increase in government expenditures alone.

(3) If the multiplier were measured with respect to government deficits instead of expenditures and if allowance were made for the favorable repercussions on private investment, Hart says my model-system would yield an estimate of about 6.0 under 1940 income tax rates. He criticizes this estimate as being much too low and compares it with his own range of estimates as follows:[19]

1. Moderately low 6.8
2. Moderately high 17.
3. Extremely high 43.

To my knowledge this is the first instance in which the "Keynesian school" has been criticized for underestimating rather than overestimating the effectiveness of government spending and government deficits.[20]

It is important to see how Hart arrived at estimates of such large

[19] The range between these estimates is so large as to render them practically useless for policy purposes. In the text Hart indicates a narrower range of from 5 to over 10. (See p. 549 of his article.) On the last page of his Appendix he indicates 6.8 to 14 as the likely range.

[20] From our estimates of the relatively small effects of government expenditures, Hart concludes, as cited above, that: "The school of economists from which these model-systems spring seems to feel that the only lesson economists need to convey to the public is that government spending can remedy depressions" (p. 552). What, then, shall one conclude from Hart's estimates of the extremely large effects of government deficits?

Hart evidently does not base his own policy recommendations on such large multipliers. For he writes that: "The likelihood that we may need to operate in the range from a 5-billion dollar surplus to a 5-billion dollar deficit seems very strong" (p. 551). With a multiplier of 17 this implies that, with a neutral fiscal policy, the economy would fluctuate within a range of over 40 per cent unemployment and over 40 per cent price inflation. With a multiplier of 43, which Hart admittedly calls an extremely high estimate, it implies that the economy might fluctuate within a range of zero employment and 100 per cent price inflation.

multipliers. For while Hart is the only one who has carried his argument to its logical conclusion by showing the multiplier which follows from his approach, many other non-Keynesians have used the same argument without realizing that they were thereby committing themselves to a super-Keynesian position.

It is obvious that the multiplier depends upon the rate at which an increment in the gross national product is respent on consumer goods and services. This in turn depends upon the rate at which an increment in the gross national product increases the disposable income of individuals after taxes and the rate at which an increment in disposable income is spent on consumer goods and services. The higher the product of these two factors, the larger will be the multiplier; the lower the product, the smaller will be the multiplier.

Hart claims that the model-builders underestimate both of these factors and consequently seriously underestimate the multiplier. The source of the alleged error is attributed to the fact that the model-builders overlooked the importance of rates of change in the national product on the variables under consideration. The period 1929-40 from which the relationships were derived was one in which income fluctuated sharply. Consequently, it is argued, the data show too large a variation in profits and too small a variation in wages corresponding to any variation in the level of the gross national product. Similarly, they show too large a variation in consumer savings and too small a variation in consumer expenditures corresponding to any variation in disposable income.

In the light of this complaint, it is worth repeating my statement in "Forecasting Postwar Demand" that experiments were made with multiple regressions using rates of change as a second independent variable. The projections obtained from these regressions on the assumption of a zero rate of change did not differ materially from those obtained by the use of the simple regression.[21]

[21] The reader may be interested to compare Hart's comments with the paragraph in my "Forecasting Postwar Demand" to which they apply.

Hart writes:

"The equations, tables and graphs which embody the model-systems here under discussion are formulated in terms of the levels at which the variables (government expenditures, revenues, consumption, investment, etc.) stand, without explicit reference either to *rates of change* or to *immediately previous levels*. . . .

"This logical limitation is not explicitly faced by the model-builders in question. In consequence, we tend to find a mixture of assumptions appropriate for static analysis with assumptions appropriate for dynamic analysis of impact effects. For example, Dr. Mosak uses a formula for corporate profits before taxes which shows them as varying by 23.6 per cent of any variation in gross private national product, derived by a regression of undeflated figures for 1929-1940. The base period, of course, reflects not experience with under-employment equilibrium but experience with sharp fluctuations—with a period in which low-income years were years previous to which activity had been much higher, and

It is true, of course, that even these multiple correlations using rates of change as an independent variable cannot tell us what the relationships might be if economic stability at full employment levels were to prevail indefinitely. In that case consumers and business might gradually make significant long-run adjustments in their income and expenditure patterns. It is reasonable to assume, for instance, that that part of consumer savings which is motivated by fear would be eliminated if job security were permanently assured. It is perhaps also reasonable to assume that profit margins would be lower and investment considerably higher than is indicated by the pre-war data if the risk of depression were eliminated. This is indeed the hope of all supporters of the Administration's full-employment bill. These changes appear probable, however, only some time after we have actually succeeded in maintaining permanent, stable full employment. They cannot be assumed in the absence of such a program.

One concrete objection that has been raised in this connection is that the long-run marginal propensity to consume may be 0.9 as against the short-run marginal propensity of about 0.8 derived by the model-builders for the inter-war years.

To this several points must be noted in reply.

(a) First, Kuznets's data, upon which the long-run estimate is based, relate to the *average* rather than the *marginal* propensity to consume. These may differ from each other very greatly, particularly at lower levels of income.[22] As Smithies has shown, Kuznets's data are

high-income years were years previous to which activity had been much lower. Had the 'active variables' been held constant until the 'passive variables' leveled out in an under-employment equilibrium, equilibrium ratios of profits to income would surely have varied much less than the regression suggests" (*Am. Econ. Rev.*, Vol. XXXV, No. 4, pp. 533-34; italics in the original).

My statement in "Forecasting Postwar Demand" reads as follows:

"Finally, it implies that the relationships which prevailed when the gross national product . . . was subject to serious fluctuations may be used as a basis for post-war projections with respect to fairly stable values of the gross national product.

"To test the effects of *changes* in the gross national product in the distribution of income by type of share, we experimented with multiple regressions using as independent variables the gross private product less 'indirect' taxes of both the current and the preceding years. The estimates of salaries and wages and of profits before taxes obtained from these regressions on the assumption that the product remained the same in both years did not differ materially from those obtained by the use of the simple regression. Inventory profits were excluded from the total throughout the analysis, thus eliminating one element that is greatly affected by changes in prices and production" (*Econometrica*, Vol. 13, No. 1, p. 32; italics in the original).

[22] If C = consumer expenditures, Y = disposable income and $c = f(Y)$, then the average propensity to consume is the ratio $\frac{C}{Y}$ whereas the marginal propensity is the derivative $\frac{dC}{dY}$. For a linear function we have:

consistent with a *marginal* propensity to consume of less than 0.8 and a slightly rising time-trend in consumer expenditures.[23]

(b) Second, even if it were correct that the long-run propensity is 0.9 rather than 0.8, it would still be improper to assume the higher figure for the period of the 1950's. Hart concedes that during the inter-war years the marginal propensity was 0.8. During the present war it has, of course, been lowered substantially. It involves too great a risk to assume that after the war it will suddenly jump to a much higher level which it may have had at the end of the 19th and the first decade of the 20th centuries, and that we shall, therefore, not be faced with depression.

(c) Finally, we must not overlook the possibility that the large rise in the projected per capita income at full employment may lower the marginal propensity to consume. Expenditure distributions by income-size suggest that the propensity to consume drops very sharply as we go up the income scale. In the past our per capita income was so low, even in peak years, that nearly all of our population had a relatively high propensity to consume. With a 200-billion-dollar gross national product, however, a very substantial proportion of our population would be in the higher income brackets where the propensity to consume has been relatively low.[24]

2. *Misleading Presentation.* The second major objection is that the

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Consumption function: $C = a + bY,$

Average propensity: $\frac{C}{Y} = \frac{a}{Y} + b,$

Marginal propensity: $\frac{dC}{dY} = b.$

Since in the regression equation "a" is positive, the average propensity is larger than the marginal. The lower is the volume of disposable income, the larger will be the difference between the average and the marginal propensity.

If the consumption function is non-linear, the average propensity will be larger than the marginal at all points for which the tangent has a positive intercept.

[23] This is the regression which Smithies used for his post-war projections, and his results are similar to mine.

Hart contends that a rising time-trend has no meaning in itself, and that the data must reflect a long-run adjustment to the rise in income. Given the increasing urbanization of the economy and the invention of new goods during the period under discussion, it is difficult to see why the assumption that consumer expenditures were subject to a rising time-trend in the past has no meaning. It is difficult to believe that if income per capita were to decline to the levels of 1900, consumption per capita would in the long run decline to the levels of 1900.

[24] Other critics have objected to the fact that the regression of consumer expenditures to disposable income was fitted to undeflated data, without allowance for changes in population and prices. As was pointed out in my paper: "A regression of per capita 'real' consumption on per capita 'real' disposable income yields results that are very similar to those obtained from the regression of aggregate money consumption on aggregate money disposable income" ("Forecasting Postwar Demand," *Econometrica,* Vol. 13, No. 1, p. 33,

basis on which the model-systems have been set up is likely to give a misleading impression as to the rôle of government expenditures in a full-employment policy.[25] This objection relates to the fact that my tables were set up to show in the final line the volume of government expenditures rather than the volume of government deficits (plus private gross capital formation) that is required to maintain varying levels of the gross national product. *In this method of setting up the tables Hart sees important fiscal policy implications. According to him it implies that, if a balanced budget would yield an under-employment equilibrium, my program would be to get up to full employment only by raising government expenditures and not by reducing tax rates.*[26]

A moment's consideration of the tables shows the basis for their arrangement. The tables give a breakdown of the gross national product by type of expenditure, consumer expenditure, gross private capital formation, and government expenditures. They show that under the specified assumptions as to tax rates, dividend policy, and transfer payments, consumer expenditures may be derived as a function of the gross national product. Consequently, we may obtain by subtraction the sum of government expenditures plus private capital formation required to sustain each level of the gross national product.

Clearly this form of arranging the tables does not imply anything at all about fiscal policy. The form is appropriate for and consistent with New Deal fiscal policy, C. E. D. fiscal policy, Brookings's fiscal policy, or any other fiscal policy.

In answer to Hart's criticism, I should simply like to pose two questions:

a. The tables showed the effects of nine alternative sets of tax rates on the volume of government expenditure required to maintain each level of the gross national product. Which of these nine alternative sets of tax rates is it implied will be kept unchanged?

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footnote 9). Smithies's regression does relate to the deflated series and his estimate of the marginal propensity to consume is even lower than mine.

[25] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, pp. 552-53.

[26] This criticism appears in the Appendix. In the text of the article, the objection raised is that I did not subtract the tax estimates given in my tables from the required amount of government expenditures to show that the required government deficit is considerably smaller. This criticism is apparently the result of too hasty reading, since the calculations which he calls for are presented on page 34 of my "Forecasting Postwar Demand."

Hart also objects that the model-systems are presented in such a way as to make it difficult for the reader who finds the results disconcerting to decide to what extent they are due to assumptions which he is unwilling to accept. Since my paper spells out the assumptions in detail, gives the basic data and presents the basic relationships both in tabular and in equation form, the interested reader can substitute any assumptions of his own for those of mine which he is unwilling to accept and see to what extent the results would be altered by the substitution.

b. If showing the amount of government expenditures under a given set of tax rates implies a fiscal policy of keeping tax rates unchanged, why would showing the amount of government expenditures minus tax revenues (*i.e.*, deficits) *under the same set of tax rates* imply a different tax policy?

Part of the answer to Hart's difficulty may lie in his confusion of two distinct multiplier concepts. He defines the multiplier as the ratio of the increment in the gross national product to the increment in the sum of the deficit plus private capital formation under a given set of tax *rates*. This is the sense in which the concept is used in his Appendix Tables I and II. In the last section of the Appendix, however, in which his own estimates of the multiplier are presented there is a sudden unexplained shift to an estimate involving constant tax *revenues* rather than constant tax rates. This second concept is also used in the estimate of the multiplier in the text of the article.[27] It is this confusion of the two distinct multiplier concepts which partially explains the mistaken criticism of the policy implication of my tables. Although he was discussing the multiplier as he defined it for a given set of tax *rates*, he apparently had in mind the multiplier as he estimated it for a given amount of tax revenue.[28]

C. *Factors Omitted*

1. *Cyclical factors*. It is objected that the model-systems omit cyclical factors, and that the "over-confident use of equilibrium models" is a "temptation to underrate the fluctuations problem." The recent model-systems may, of course, understate the cyclical problem, since they do not include any cyclical variation in the magnitudes of the parameters, such as the marginal propensity to consume. To the extent that this is true, however, they understate rather than overstate the problem of maintaining stable full employment.

It should be evident that the omission of cyclical factors is not inherent in the model-systems approach, nor in the use of the Keynesian method of analysis. Model-systems of business cycles have been developed along Keynesian lines, both theoretically and empirically; the works of Beveridge, Kaldor, Kalecki, Samuelson, Tinbergen and the

[27] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, p. 549.

[28] It is obvious that a given volume of government expenditures will have a much smaller effect on the national product if tax rates are maintained constant than if they are simultaneously cut to keep tax revenues unchanged. It should also be apparent that a given deficit will have a different effect on the national product, depending upon whether it is associated with constant tax rates or constant tax revenues. In the former case the deficit is the result of government expenditures increasing more than government revenues. In the latter case it is the result of an increase in government expenditures only. See my paper, "Factors Affecting Adequacy of Demand for Potential Postwar Output," Conference on Research in Income and Wealth, November, 1945.

Swedish school are sufficient evidence. The deliberate omission of the cycle from the recent model-systems is due to the fact that the authors were investigating only the structural relationships in the economy at given employment levels.

In addition to this general objection relating to the business cycle, both the consumption functions and the estimates of private gross capital formation are criticized for failure to include the effects of certain factors.

2. *Factors in the consumption function.* The major objection raised is that the consumption functions fail to allow for the effects of the accumulation of abnormal cash balances. Hart's own comments suggest, however, that he is somewhat doubtful concerning the significance of this factor. The period of the 1930's demonstrated that it is possible to increase cash balances substantially without any observable effect on consumer expenditures. A multiple regression of consumer expenditures on disposable income and cash balances yields a regression coefficient on cash balances that is not statistically significant. Abnormal cash balances may, of course, have a significant temporary effect on consumer expenditures in the transition years, but in the light of the experience in the 1930's, it is unwise to assume that the problem of inadequate demand will be solved by the larger cash balances of the 1950's.[29]

3. *The estimates of private gross capital formation.* As has already been indicated, the model-builders omitted any investment function from their analysis and simply indicated the order of magnitude which they thought likely.

To this approach Hart raises three objections:

a. *Assumptions of ignorance.* He concedes that the frank treatment of an area of ignorance by omitting the investment function has much to commend it, but he objects that "of course it still leaves the problem of what the undefined relations are actually like" (p. 539).

[29] For a fuller discussion of the author's position on the relationship of cash balances and income to consumer expenditure, see "Income, Money and Prices in Wartime," by Jacob L. Mosak and Walter S. Salant, *Am. Econ. Rev.*, Vol. XXXIV, No. 4 (Dec., 1944), pp. 828-39.

One supporter of the cash balance approach has suggested that the failure of consumer expenditures to rise with the increase in cash balances during the 1930's is attributable to the decline in interest rates which took place at that time. This argument is not valid, however. A decline in interest rates will, of course, significantly affect the relative holdings of cash and securities. There is no evidence, however, that it has a significantly depressing effect on consumption. Indeed classical economics has generally maintained that a decline in interest rates would raise rather than lower consumption, and it was not until fairly recently that even the *theoretical possibility* of a *positive* correlation between consumption and interest rates was adequately explained.

b. *Inadequate recognition of cumulative factors.* He thinks that the estimates fail to take into account the deficiencies of plant and equipment that have accumulated during the war.

c. *Underemphasis on intangibles.* He has the impression that the model-builders do not give adequate recognition to the effects of the general "economic climate" (*i.e.,* labor policy, monopoly policy, and general social climate) on investment.

The first objection is, of course, correct. Unfortunately "the problem of what the undefined relations are actually like" remains even after the improvements suggested by Hart. For he simply says that "the evidence on the effect of activity on investment is very unreliable for statistical reasons, and there is a wide range of possibilities." This statement is correct, but it does not add much to what the model-builders have already said.[30]

The second objection, it seems to me, should be reversed. The decumulation of the stock of plant and equipment which took place during the war was quite small and was confined to a few industries. There is general agreement that it will be more than made up during the transition years. Since the model-builders explicitly confined themselves to 1950 so as to eliminate the effects of wartime distortions, there was obviously no point in considering the effects of a deficiency in capital goods. On the contrary, if the model-builders are to be charged with ignoring the capital stock factor, the charge should rather be that they did not emphasize the damping effect of the accumulation of capital goods on the demand for new plant and equipment.[31] On this point they understated rather than overstated the problem of sustaining full employment over a reasonably long period of time.

The third objection is simply the result of a mistaken impression. Clearly factors of "economic climate" do have some effect on investment. This was indicated in my statement in "Forecasting Postwar

[30] Hart does suggest in the Appendix a range of 0.04 to 0.06 for the marginal propensity to invest, but so far as the reader can judge, the estimate is not derived from any statistical analysis of the investment function. If it is not, then Hart is guilty of the very charge of "careless use of assumptions of ignorance" which he places against the model-builders. I suspect that Hart ruled out a marginal propensity to invest of 0.08 only because, with the high marginal propensity to consume which he assumes, it would yield a fantastically high multiplier. In fact, in Table I of his Appendix he would have obtained a multiplier ("leverage factor") of infinity if he had taken a marginal propensity to invest of only 0.11 in his "Moderately High" column and of only 0.09 in his "Extremely High" column.

[31] Hart states that the omission of the capital stock factor was "presumably intended as a precaution against overstating the case for 'stagnation' which the model-builders are developing." It should be readily apparent that the proposition that additions to the stock of plant and equipment have damping effects on further additions does not commit one to a "stagnation" theory. Stagnationists and anti-stagnationists alike would accept the proposition.

Demand" that the government must "stimulate private capital formation by appropriate tax legislation, underwriting of loans to small business, support of industrial research and related measures." It was on the basis of such general considerations, as well as considerations of the level of output, that the reader was invited to judge the attainability of the required amount of investment. Unfortunately, Hart himself sheds no light on the effects of these factors on investment either in the past or in the future.

D. *Proposals for Improvement*

In view of the criticism of the static aspects of the "models" approach and the thesis that "the discussion has now reached a stage for a more careful survey . . . of ways to improve it," it was to have been expected that Hart would propose substitution of dynamic models such as those which have been developed by Tinbergen. The reader is, however, let down immediately with the statement that his "suggestions are aimed at patching up the static systems . . . rather than at developing a fully dynamic system."[32]

What does this "patching up" consist of? Three proposals are made on this score, but not one of them introduces *any* dynamic element in the system. Upon inspection, Hart's own system turns out to be just as much a static system as those which he criticizes so vigorously. Hart's proposals are:

1. That the economic variables be classified as active or passive according as they are or are not subject to change by positive policy action;
2. That the system of relations be expanded;
3. That we allow for uncertainty about the magnitudes of the parameters "by inserting a whole battery of alternative assumptions" as to their values.

Clearly the first point has nothing to do with any of the criticisms of the model-systems. To borrow some terms from biology, the model-systems dealt with the "physiology," not the "anatomy," of the economic system. The first proposal for "patching up" relates only to the anatomy, a subject with which the model-systems were not directly concerned.

Is the proposal a good one on its own grounds? I do not think so. There are very few variables which are not subject to change by positive policy action. Hart lists private consumption, private investment, income payments, disposable income, and individual savings as "passive variables." Clearly these variables are all subject to change by positive policy action. The Administration full-employment bill specifically calls

[32] Hart, *Am. Econ. Rev.*, Vol. XXXV, No. 4, p. 545.

upon the government to encourage private investment and consumption and to use governmental compensatory fiscal policy only as a last resort. Very soon after charging that the model-builders overlook the effects of labor policy, monopoly policy and other factors on investment, Hart himself classifies investment as a passive variable not subject to change by positive policy action. If all of the variables just cited were really passive, then a government full-employment policy would indeed have to be limited to compensatory fiscal policy.

The proposals for expansion of the system of relations refer primarily to the inclusion of cash balances in the consumption function and the inclusion of an investment function.[33] The proposals are certainly not new, and I daresay all the model-builders considered the factors in setting up their models. It would have been more fruitful if Hart had been able to present any data in this field which the model-builders might have used and did not. Merely to state that it would be desirable to have additional information on these points is to express a hope which all of the model-builders certainly share.

The third proposal is a good one, provided the range is confined to reasonably likely values. I doubt, however, whether the model-builders needed the suggestion quite as much as Hart seems to think. The Keynesian literature has long been filled with discussions of the effects of alternative magnitudes of such parameters as the propensity to consume upon the level of income. The National Planning Association pamphlet, which Hart cites, set up alternative models based on alternative assumptions as to the magnitude of the marginal propensity to consume. Likewise, Musgrave, the model-builder whose paper prompted Hart's own article, devoted his entire discussion to the problem of the effects of varying propensities to consume on the relationship of the government budget to the level of employment. An unpublished paper of my own, a copy of which Hart had read before publishing his own article, dealt with the same and related problems.[34]

Conclusion

The models relating to the national budget show that the American economy faces a threat of severe depression in the post-transition years

[33] It is also suggested that the disposable income factor in the consumption function be broken down into the three components of transfer payments, other income payments, and personal taxes. This is difficult, however, because in the past transfer payments and personal taxes were too small to yield significant estimates as to their separate effects. I did in fact experiment with a more important breakdown of income payments into employee and other income, but the results, as indicated in my paper, were not significantly different from those yielded by the simple correlations.

[34] A revised version of this paper was presented to the Conference on Research in Income and Wealth in November 1945, under the title "Factors Affecting Adequacy of Demand for Potential Postwar Output."

unless the federal government assumes responsibility to maintain stable full employment. This does not mean, as the critics seem to believe, that the model-builders want the government to confine its action to compensatory spending. It means instead that: (1) the government should do all it properly can do to change the pre-war income and expenditure patterns so as to increase private consumption and investment expenditures, and (2) it should adjust its own outlays and revenues so as to maintain total expenditures on goods and services at the level required for full employment. Far from suggesting that full employment could be readily achieved through public spending, the models indicate that even a program relying on both public spending and tax revisions might be inadequate. In other words, we shall need not only a sound fiscal policy but also a change in the private income and expenditure patterns if we are to maintain stable full employment.

By placing their emphasis on the need to prevent continued unemployment the model-builders do not mean that fiscal policy should be inflexible. Of course, our policy should be sufficiently flexible to curb excessive demand if it threatens. The models suggest, however, that the prospects of excessive demand over a period of years in the post-transition period are slight indeed, and that the major threat in the future is one of depression rather than of excess demand.

The post-war projections derived from the model-systems are subject to a number of important qualifications which must be constantly borne in mind. They are not valid for the transition years because of the wartime and transition-period distortions. They cannot be projected indefinitely into the future because economic relationships change over time. The relationships are based on data for pre-war years when income was lower than the projected post-war levels and was subject to violent fluctuations. These objections, however, are not as serious as they might appear. First, the experience of the war years indicates that the basic problem of inadequate private expenditures will not be smaller at the higher levels of income. Second, experiments made to test the effects of *rates of change* in income upon the relevant equations indicate that the projections from the simple model-systems are adequate approximations for periods of relatively stable income.

The models that have been developed thus far are, of course, intended to give only a first approximation to the workings of the economy. They employ for the most part simple linear equations. For reasons which have been explained, they omit the distribution of income by income-size and the cash balance factor from the consumption function. More important than these omissions perhaps is the fact that the model-systems contain no investment functions. They tell us, therefore, only how much government expenditures and capital formation combined

and not how much government expenditure alone we need to maintain any desired level of the gross national product. This is a serious defect which calls for much further analysis but it is not a fatal one, since the past data provide benchmarks for common-sense judgments on the probable level of capital formation.

The models have been criticized as unduly biased on the side of deflation. It is worth-while emphasizing, therefore, that it was on the basis of these very same models that the model-builders estimated the extraordinary size of the inflationary gap during the war. The model-systems represent a method of analysis, not a prognosis. They yield estimates of inflation or deflation according to economic circumstances.

It is a remarkable paradox that the models should be criticized by non-Keynesians primarily because they yield fairly low estimates of the income-multiplier with respect to government expenditure or government deficits. Hart is the only one who has made this argument explicit, but the criticisms of the other non-Keynesians would lead to the same conclusions. We thus have the peculiar phenomenon of non-Keynesians attacking the Keynesians for underestimating the effectiveness of government deficits.

The major objection that has been raised is that the pre-war data show (1) too large a variation in profits and too small a variation in wages corresponding to any variation in the gross national product, and (2) too large a variation in consumer savings and too small a variation in consumer expenditures corresponding to any variation in the disposable income of individuals. The critics thereby concede, however, that the magnitudes estimated by the model-builders are the ones which prevailed in the pre-war period and they rest their case upon the assumption that the magnitudes will automatically change in the right direction in the post-war period. They thus accept in full the logic of the argument of the model-builders, for instance, that the post-war distribution of income as between profits and wages will be a major factor in determining the magnitude of the problem of full employment. The issue, therefore, reduces itself to the question whether the desirable change in the distribution of income shares will, in fact, take place in the post-war period. The model-builders think a positive program of action will be necessary, whereas the critics think it will take place by itself.

The controversy reduces itself to this:

The model-builders say that in order to maintain full employment it will take a definite national policy (1) to secure a more favorable private income and expenditure pattern than existed prior to the war, and (2) to provide for government expenditures to fill whatever gap is left if private expenditures remain inadequate. The magnitude of

the latter would depend upon the degree of success achieved in the former. The critics agree to one part of each of these statements, namely: (1) that we need a more favorable private income and expenditure pattern, and (2) that government expenditures could close the gap should private expenditures remain inadequate. They believe, however, that no national full-employment policy is necessary because (1) the income-expenditure pattern will itself change in the desired manner, and (2) if a small gap should exist it could, owing to the large income-multiplier, easily be taken care of by small changes in the government budget.

The critics do not dispute that, if the income-expenditure pattern in the near future were to resemble that which prevailed prior to the war, a definite national full-employment policy would be clearly indicated. It seems unwise then to rule out the need for such a policy merely on the hope or possibility that the pattern will change sufficiently of its own accord.

PSYCHOLOGICAL ANALYSIS OF BUSINESS DECISIONS AND EXPECTATIONS

By GEORGE KATONA*

I. *Psychology and Economics*

In his presidential address at a recent meeting of a psychological association, Gardner Murphy pointed out that most of the problems facing psychologists today are interdisciplinary problems.[1] He discussed a variety of such problems falling at the same time into the realm of psychology and of medicine, biological sciences, sociology, or politics. He made no mention, however, of any question on the borderline between psychology and economics, which may serve as an indication that few professional psychologists have applied their findings to the analysis of economic behavior.

It is, therefore, not surprising that economists have found in the publications of psychologists little to attract their attention. Yet, the need for collaboration between the two disciplines has frequently been acknowledged. For example, in an essay on "Human Behavior and Economics" in 1914, Wesley C. Mitchell deplored the prevailing trend toward "non-intercourse with psychology" and added that "we may hope both to profit by and to share in the work of contemporary psychologists."[2] Four years later J. M. Clark wrote in an article on "Economics and Modern Psychology": "The economist may attempt to ignore psychology, but it is sheer impossibility for him to ignore human nature. . . . If the economist borrows his conception of man from the psychologist, his constructive work may have some chance of remaining purely economic in character. But if he does not, he will not thereby avoid psychology. Rather, he will force himself to make his own, and it will be bad psychology."[3]

Borrowing a useful conception of man from psychology became increasingly difficult in the 1920's when behaviorism and psychoanalysis were the most popular schools of psychology. Psychology could hardly be of assistance in explaining economic behavior at a time when, as

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[1] G. Murphy, "Psychology and the Post-War World," *Psych. Rev.*, Vol. 49 (1942), p. 304.

[2] *Quart. Jour. Econ.*, Vol. 29 (1914), pp. 1 *ff*.

[3] *Jour. Pol. Econ.*, Vol. 26 (1918), p. 4.

Frank H. Knight rightly said, there was "in modern psychology . . . an increasing emphasis on unconscious motivation, and on the prejudice and caprice in the conscious motives of men."[4]

This might explain why J. M. Keynes, in describing "psychological characteristics of human nature," did not borrow from psychologists but proposed, without their aid, what he called "a fundamental psychological law" referring to the propensity to consume under the influence of changes in income. Keynes also ignored the work of psychologists in describing certain subjective factors that contribute to the formation of producers' expectations.[5]

When the interest of economists shifted from the equilibrium of an industry as a whole to that of the individual firm, psychology gained in importance, and a subjective concept, that of expectations, became one of the central concepts in economic theory.[6] Concerning the rôle of expectations in economics, we may subscribe to the statement of Joseph A. Schumpeter that we must "discontinue the practice of treating expectations as if they were ultimate data and treat them as what they are—variables which it is our task to explain"; and, "Unless we know why people expect what they expect, any argument is completely valueless which appeals to expectations as *causae efficientes*."[7]

How should expectations be explained? Schumpeter says "by linking them up with the business situations that give rise to them." Others, notably J. Tinbergen and James W. Angell, maintain that profit expectations are based largely or entirely on current and past profits.[8] It may be, however, that neither of these explanations is entirely adequate. That differences in price expectations cannot be derived exclusively from current and past price data is indicated by the great importance which Hicks and his followers attach to the elasticity of expectations.[9] That expectations may not be automatic responses to

[4] *The Ethics of Competition* (New York, 1935), p. 241.

[5] *The General Theory of Employment, Interest and Money* (New York, 1936).

[6] While the study of psychological factors gained considerably in importance with the emphasis on expectations (and on *ex ante* considerations), the following statement appears to be far too narrow: "Psychological factors come into consideration in economic theory in connection with anticipations and expectations" (Gottfried Haberler, *Prosperity and Depression,* 1941, 3rd ed., p. 143).

[7] *Business Cycles* (New York, 1939), Vol. 1, pp. 55 and 140.

[8] J. Tinbergen, *An Econometric Approach to Business Cycle Problems* (1937), and *A Method and its Application to Investment Activity* (League of Nations, 1939); J. W. Angell, *Investment and Business Cycles* (New York, 1941), p. 85: "The general level of anticipations . . . is equivalent to, and can be replaced by, some summary expression for the recent history of incomes."

[9] Expectations may be inelastic or may have a negative or a positive elasticity according to how they are affected by changes in current prices; *cf.* J. R. Hicks, *Value and Capital* (Oxford, 1939), pp. 205 and 249 *ff.*

prevailing business situations is recognized by G. L. Shackle who writes that since "it is, after all, the decisions of individuals which determine what will happen," there is a "need to study the psychology of expectations as a process of the individual mind."[10]

So much of the need for coöperation between economics and psychology. Is such coöperation possible, and can it be fruitful? These questions can best be answered by analyzing specific issues of economics and finding out whether their understanding and solution can be advanced by applying to them psychological principles and methods.[11] Among the various economic issues that could be studied from the point of view of modern psychology, a few aspects of the dynamics of economic decisions are selected here for discussion. In this field we find that in describing some of their most important problems economists and psychologists use the same terms. The economists, in studying problems of pricing, speak of price flexibility or price rigidity; the psychologists, in studying problems of habit formation, speak of the flexibility or rigidity of conduct.

Our first task will be to characterize genuine business decisions in contradistinction to inflexible routine actions. This discussion will open the way to the study of business expectations. With respect to both tasks, first, psychological theories of habit, learning, and motivation will be outlined, from which conclusions or hypotheses applicable to business behavior will be derived. Then a few results of empirical studies will be presented which the author undertook with the purpose of testing those hypotheses. Factual examples, of course, cannot prove the hypotheses; it hardly needs to be said that the interrelation between theory and factual findings is much more complex. Nevertheless, empirical studies may show not only that certain hypotheses are plausible but also that, and in what way, the hypotheses may promote our understanding of economic developments. In this instance, presenting psychological hypotheses and economic illustrations should indicate of what use psychological considerations are for economics.

II. *Routine Behavior and Genuine Decisions*

There are many problems extensively studied in psychology which have no relevance for the analysis of business behavior. Knowledge of man's innate or inherited aptitudes and capacities, and of instinctive or automatic actions, cannot be utilized for the given purpose because,

[10] G. L. Shackle, "The Expectational Dynamics of the Individual," *Economica*, Vol. 10 (1943), p. 99.

[11] Success in the application of psychological principles to economic issues should benefit not only economics but also psychology, by strengthening the validity of those psychological findings that contribute to the understanding of economic behavior.

in studying behavior of a higher order, mechanistic or invariable connections between specific stimuli and specific responses are hardly ever found.[12] Human behavior is in most cases learned behavior, which explains that different responses may occur to the same stimuli or, more generally, that different behavior may occur in the same objective situation. Some economists, speaking of the automatic, self-regulatory nature of market economy seem to imply that pricing, selling, and buying behavior are determined solely by unalterable, impersonal forces; others say, in accordance with psychological findings, that "objective market conditions leave to the business executive a considerable range of subjective choice of policies."[13] The relevant question is whether the subjective choice is capricious or subject to analysis.

What are the laws of learned behavior? Associationists and behaviorists hold that individual past experience is the essential determinant of behavior: the response to a given situation is determined by the frequency of the individual's past responses to the same situation. In order to predict how a person will respond to a given stimulus, the most important clue, according to this school, is how he responded to similar stimuli before.[14]

Social psychologists have emphasized that factors other than personal past experience (for example, cultural-social norms) may contribute to the determination of behavior. Yet the basic contradiction to the theory that the response is a function of the number of past reinforced responses to the same stimulus came from the realization that past experience does not merely alter the response but may change the stimulus itself. The response is determined by what the stimulus means to the respondent; it changes when the meaning of the stimulus changes. Meanings are not just a matter of subjective interpretation. It is the setting or context of the stimulus, the greater whole of which it forms a part, which determines the meaning of the stimulus. The same

[12] One possible exception to this statement, action under extreme compulsion, may be neglected here. Our psychological analysis is applicable only to administered prices and not to authoritarian price-making. Administered prices are "to be found in situations in which the seller is a sufficiently important factor in the market and has sufficient control over productive resources to make it possible for him to adopt and carry out a price-and-production policy" (E. G. Nourse, *Price Making in a Democracy* [Washington, 1944], p. 10).

[13] D. H. Wallace, in *Public Policy,* edited by C. J. Friedrich and E. S. Mason (Cambridge, 1940), p. 110.

[14] The principle of the frequency of repetitions is usually qualified by assigning a greater rôle to more recent than to less recent responses and by the "law of effect": only rewarded responses may serve as reinforcements. The three leading modern representatives of this theory are E. L. Thorndike (*cf.,* for example, *Human Nature and the Social Order* [New York, 1940]), E. R. Guthrie (*The Psychology of Learning* [New York, 1935]), and C. L. Hull (*Principles of Behavior* [New York, 1943]).

stimulus may elicit different responses if it is perceived or understood as the part of the one or other whole.[15]

Suppose the price of a commodity or security goes up; what will be the reaction to the price increase? According to the psychological principle just described, the response will depend upon how the stimulus is perceived within its total setting. If the price increase is understood as a part of an enduring upward movement, it will elicit one reaction; if it is understood as an unjustified aberration from the normal, another reaction, and if it remains uncertain what the price increase means, possibly a third reaction. This example is given here to show that the decisive and still unsolved question, "What determines the reaction?" is reducible to the other question, "How do we acquire meaning?"

This is the central question of the psychology of learning. There are two ways of learning: through repetition and through understanding.[16] As an example of learning by repetition: I am told that the French word *fenêtre* means "window," and if I hear that often enough, I learn it. Meanings acquired by repetition must be repeated very often in order to form habits, and such habits are not easily adaptable to changed situations. Through learning by understanding, on the other hand, enduring and adaptable meanings can be acquired. Understanding requires the organization—or reorganization—of an experience, a process which is undertaken only if there is a sufficiently strong need or motive to do so. In a cross-road situation when we face several alternative possibilities, or in a new situation when old habitual ways of acting do not suffice, we try to solve the problem, gain insight into the situation, and understand it. Understanding results from the organization of experience within a larger context in such a way that previously unrelated items are viewed as integrated parts of the whole. The results of understanding are principles of knowledge or action, not piecemeal data or mechanical habits. Yet once acquired, the principles may govern action under various conditions without evoking the need for new reflection and new understanding.

From these findings of the psychology of learning, two conclusions can be derived that are applicable to the formation of business decisions.

[15] These statements are derived from experiments of *Gestalt* and field psychologists who demonstrated the rôle of organization (grouping, patterning) in perception; *cf.* K. Koffka, *Principles of Gestalt Psychology* (New York, 1935). That meaning is a matter of organization and not of familiarity was shown by M. Wertheimer (*cf.* "*Gestalt* Theory," reprinted in *Social Research,* Vol. 11 [1944], and G. Katona, *Organizing and Memorizing* [New York, 1940]). See also E. C. Tolman, *Purposive Behavior in Animals and Men* (New York, 1932), and H. Cantril, *The Psychology of Social Movements* (New York, 1941).

[16] G. Katona, *Organizing and Memorizing* (New York, 1940); W. A. Brownell, *Learning as Reorganization* (Durham, N.C., 1939), and *Learning the Multiplication Combinations* (Durham, N.C., 1943).

The first refers to habitual behavior and maintains that principles, well understood in their original context, tend to be carried over from one situation to another. This is the most important explanation of routine or conventional action, in contrast to purely repetitive action, never fully understood or understandable, such as tapping the typewriter here for "s" and there for "t."

The second refers to new decisions and actions and maintains that the emergence of a new situation and the realization that certain stimuli belong to a new context, different from a previous one, leads to the acquisition of new meanings through understanding.

Instead of proceeding with psychology and quoting experimental evidence for the two propositions or discussing differences between schools of psychology, we shall now turn to a few illustrations from the field of economics. We shall discuss specific instances of substantial changes in business policies, and of the absence of such changes, and shall try to show how the preceding psychological analysis applies to them.

We begin with two examples of rigidity in business policies.[17] Many years ago most restaurants, especially the larger ones, adopted the system of pricing meals according to the cost of the food that went into them. The restaurants calculated their total receipts and the total cost of the food bought by them and endeavored to keep the ratio between the two constant. From 1940 to 1943, when food prices rose rapidly and restaurant prices were not subject to price control, this system was maintained unchanged by a great many restaurants. In other words, they increased their prices or cut down on the quantity or quality of their meals every time the calculated ratio increased. What does that mean? If food prices increased, as they did in those years, keeping the ratio unchanged brought about a greater difference in dollars between receipts and food costs. Suppose a restaurant operated on a 40 per cent ratio. Then, in 1940, food that cost 40 cents went into a meal priced at $1.00; in 1943, when food prices had risen 50 per cent, the same food cost 60 cents and went into a meal priced at $1.50. Thus, in 1943, there was a difference of 90 cents as against 60 cents in 1940 to cover other expenses and allow for profits. Among the other expenses, however, some—for example, for linen and china and especially rents—went up comparatively little. Then, too, the volume of restaurant business generally increased sharply so that even unchanged dollar margins would have brought about increased aggregate operating

[17] The examples are taken from an interviewing study concerning business behavior during the war economy, sponsored by the Cowles Commission for Research in Economics and the National Bureau of Economic Research; *cf.* G. Katona, *Price Control and Business*, (Bloomington, 1945). For the sake of brevity, relatively recent developments are chosen as illustrations, it being assumed that the reader is familiar with their background.

profits. Despite these facts, interviews conducted in 1943 with the managers and owners of several restaurants revealed that they had not kept the unchanged ratios with the idea of increasing their profits. They said that they had kept the same ratios because they had learned in the past that that was the right way to run a restaurant The food-cost principle was maintained unchanged because of the tendency of carrying over from one situation to another certain principles that were well understood in their original context; there was no realization that the unchanged application of the old principle meant something different under the new conditions.[18]

We find in this example that price flexibility—the frequent price increases by the restaurants—was the result of extremely rigid principles. This is also the case in a second example in which, however, the inflexible principles brought about lower rather than higher profits.

Throughout 1942 and as late as January, 1943, most retailers of clothing, shoes, furniture and linen, maintained their policy of conducting seasonal clearance sales. At that time there was hardly any slow-moving merchandise, changes in style had become much less pronounced, and the retailers' main problem was getting goods rather than selling them. Nevertheless, several retailers went so far as to mark down the prices of the same proportion of their stock as usual. Others marked down less merchandise and sold it at a smaller discount than usual but declared that they would not think of changing the established principle of merchandising, that sales must be promoted by markdowns during certain months and stocks must be cleared by the end of the season. Careful analysis showed that in many cases complex "rational" explanations of this behavior were out of place. There was no weighing of the profits lost by marking down merchandise as against the chances taken by discontinuing the clearance sales or by alienating certain customers. The retailers simply continued to make use of their old-established policy without realizing that it did not fit under the changed conditions.

Yet, a short time later, in the spring and summer of 1943, most retailers discarded markdowns altogether. This action can serve as an example of the second principle of behavior described above: established policies were changed under the impact of new developments which created a subjectively new situation. It was the great buying wave for clothing, occasioned by the introduction of shoe rationing in February, 1943, and by announcements of forthcoming

[18] That the retailer "in all probability" utilizes a rough rule-of-thumb method when he adds a uniform markup to his buying prices is mentioned in *Cost Behavior and Price Policy*, by the Committee on Price Determination, National Bureau of Economic Research (New York, 1943), p. 285.

shortages in civilian goods, which shook the traditional orientation of most retailers and led them to change their policies.

Such a change in policy was further illustrated in the summer and fall of 1943, when many retailers decided to reduce their commitments and inventories. Up to that time they had bought all the merchandise they could by placing large orders with the manufacturers in the expectation of getting at least a part of the goods ordered. When Mussolini was forced to resign and Italy surrendered, they changed that policy: a new situation arose which was no longer governed by the expectation of a long war, growing scarcities, and the subjective assurance of being able to sell whatever they had. Thus a new decision was taken or an established policy reversed, when the greater context, the frame of reference of the business policy, underwent a change.

These few examples may suffice to illustrate the thesis that changes in business policies, and the absence of changes, must be understood from the point of view of the prevailing greater context, for in human conduct flexibility is a function of the subjective realization of new conditions, and rigidity a function of the lack of such realization.

III. *Psychology of Expectations*

This same principle helps toward an understanding of the rôle of expectations. In psychology, the study of expectations forms a part of the psychology of learning, since expectations are not innate or instinctive forms of behavior but rather the result of experience. Therefore, expectations are explained by the same two principles by which all learning is explained, that is, by repetition or understanding (or both). The theory of expectation based on repetition alone is: I expect those things to happen that happened before, and the frequency of my past experience (the number of reinforcements) determines the strength of my expectations. In other words, if I have experienced the sequence a-b-c-d several times and a-b occur again, then I shall expect c-d to follow, and the more frequently I have experienced the sequence, the more certain I shall be that c-d will follow. According to the same principle, the more frequently I hear or read a statement, the more I shall believe in it; this holds good of statements about the past as well as about the future.[19]

Psychologists who are not associationists admit that frequency is the determining factor of expectations under certain conditions; they maintain, however, that the strongest expectations originate in under-

[19] The main qualification usually added is that the prestige of those who make the statements may modify the rôle of frequency. Prestige again may be explained by repetition or by understanding, but the discussion of this question would lead us too far astray.

standing. We shall illustrate this by describing briefly laboratory and classroom experiments which the author made a few years ago.[20]

The subjects in some of the experiments were undergraduates who had had no previous instruction in physics. The students were given a brief explanation of the principle of inertia and of the parallelogram of forces. Then followed the test which contained such questions as:

> Standing at the open window of a speeding railroad car, you aim your rifle directly at a distant stationary target. Would you expect the bullet to hit the target or to pass ahead of or behind it?
>
> A fast and a slow airplane release their bombs when they are directly above their target; would you expect the bomb of the fast or the bomb of the slow airplane to fall nearer to the target?[21]

These specific questions had *not* been discussed in the instruction period, but those students who had understood the principles explained to them were able to answer correctly. They rightly concluded that the bullet must be deflected by the momentum of the train and the bombs by the momentum of the planes. Could it possibly happen, the students were asked, that their expectations would not be fulfilled? Under no circumstances, was the answer. It was shown in these and similar experiments that new and strong expectations were derived from systematic and well-understood knowledge. In parallel experiments in which the answers to the test questions were memorized, without an understanding of why the one or the other result must occur, much weaker and much less stable expectations were formed. Thus the strength of the expectations was not a function of the frequency of past connections.

In similar experiments, certain simple principles of wartime inflation were explained to students of science in the fall of 1941; how and why consumer purchasing power increases and civilian supply decreases during a total war, and how changes in supply and demand affect prices. Students who understood these principles expressed the strong expectation that prices would go up the following year. A comparable group of students read a number of speeches, attributed to persons of high prestige, in which the prediction of higher prices was made several times without explaining why the price increases would take place. In later tests it appeared that only in a few instances did such reading bring forth the expectation of price increases, and even those expectations could be easily shaken.

[20] G. Katona, "On Different Forms of Learning by Reading," *Jour. Educ. Psych.*, Vol. 33 (1942), pp. 335 *ff.*; also, *War Without Inflation, The Psychological Approach to Problems of War Economy* (New York, 1942), pp. 10 *ff.*

[21] The experiment was made in 1940 before newspapers and periodicals had familiarized the public with the trajectory of bombs.

We cannot go into the detail of these experiments. It is more important for our purpose to repeat again what understanding means in psychological terms. Understanding, in which strong expectations originate, is not identical with full and reliable knowledge. Neither is it a private feeling, such as the feeling of pain. It consists of the integration of various data within a context in such a way that the "gaps" are closed.[22] Understanding occurs only when a need for it arises, which is generally the case when a subjectively new situation emerges. For long periods expectations, like any other form of acquired behavior, may be routine, habitual, until something happens that creates a crossroad situation, a problem, and thus a need for reorganizing one's frame of reference.

What do these psychological findings mean for the analysis of business behavior? First, they indicate that new expectations bringing forth new economic decisions are not an everyday occurrence. Since the larger context in which new expectations originate does not change very frequently, it is questionable whether business behavior is correctly described as resulting from and consisting of a continuous revision of expectations. Business actions are frequently routine in the sense that expectations or changes in expectations play hardly any rôle in determining them.

Secondly, expectations can and even typically do change radically. The need for the reorganization of a greater context does not usually arise under the impact of slight changes in the environment, nor would such a reorganization be likely to bring about small adjustments in expectations (*e. g.*, it would hardly cause a business man to expect his sales to increase 6 rather than 5 per cent). Therefore, when business decisions are determined by the emergence of new expectations, radical changes in the decisions are probable.

Thirdly, it follows from the psychological findings that when expectations do change, they are likely to change at about the same time and in the same direction for many individual business men. The subjective feeling of a changed situation and the need for reorientation in one's thinking are usually dependent upon general economic, social, and political events which many business men experience at the same time. Uniformity or similarity of new decisions need not, therefore, reflect automatic or imitative responses, but may be the result of many individuals reacting to the same change in the setting.

IV. *Business and Consumer Expectations*

We thus conclude from psychological considerations that expectations

[22] *Cf.* G. Katona, "The Rôle of the Frame of Reference in War and Post-War Economy," *Am. Jour. Soc.*, Vol. 49 (1944), p. 343.

tend to change infrequently, radically, and simultaneously. Illustrations of these assumptions may be drawn from the study of business behavior under price control in which it was found (a) that business men had definite price, sales, or profit expectations only at certain times, and not at all times; (b) that when new expectations arose (*e. g.*, that price control would break down or that the "line would be held"), they usually represented radical changes in the orientation; and (c) that such reorientations frequently occurred among many business men at the same time so that they formed what is often called the "atmosphere" or "climate" in which business operated.[23]

To discuss first the second point: In 1941 many business men were puzzled by the change from a "buyers' market" to a "sellers' market" and sought an understanding of that change. Some of them grasped the relationship of war, increase in national income, and decrease in available civilian supplies to prices. The result of this new understanding was the expectation of higher prices.

A few words may be inserted here about demand curves or, to be precise, subjective sales curves that show what the entrepreneur believes will happen when prices or sales are altered.[24] It appears that the most important and most common effect of the emergence of new expectations is a shift of the subjective sales curve to the right or to the left, and not a change in the elasticity of the curve at the given price.[25] In 1941 some business men came to expect that they would be able to sell larger quantities at the same price or the same quantities at a higher price. The position of their subjective sales curve thus shifted to the right (and upward).

In the period 1942-44 it happened that expected price increases failed to materialize because of the success of price control. When a business man understood how and why price control could succeed and derived from his understanding the expectation that inflation would not take place during the war, his subjective sales curve, which previously had shifted to the right, shifted back to the left.

[23] *Cf.* G. Katona, *Price Control and Business*, chaps. XVI and XVII.

[24] R. Triffin states that the only relevant sales curve is the subjective or imaginal curve expressing the expectations of the producer (*Monopolistic Competition and General Equilibrium Theory* [Cambridge, 1940], p. 62). Since business men rarely experiment with different prices or different quantities of output under the same conditions, usually only one point of a demand schedule is actual; some other points may be subjective and thereby of considerable influence; the other points are hypothetical constructions of the theorist. For the sake of simplicity, we shall speak of a subjective sales *curve* without assuming that all points of the curve are subjectively given.

[25] In *Cost Behavior and Price Policy* (New York, National Bureau of Economic Research, 1943), the authors state, without further explanation: "It seems probable that anticipated shifts in the demand curve, to which the firm must adjust its decisions, have more relevance for price policy than does its shape" (p. 269).

In articles on the war economy, we frequently read the thesis that price control tends to increase demand because the price set by the government is lower than that which would prevail without any control, and the lower the price the greater the quantity demanded. Such a proposition is based on sales curves which reflect current prices only. If expected prices are taken into account, it is conceivable that price control may lower demand: without control the quantity demanded may be larger at higher prices than it would be with control at lower prices. This may happen because the absence of control is associated with an expectation of price increases leading to a shift of the curve to the right (and therefore to stocking up and hoarding), while the presence of control is associated with an expectation of stable prices leading to no change in the curve or, for some merchants, to a shift of the curve to the left (and therefore to restrained buying).

Yet such radical changes in the expectations which decisively influence business decisions occur only at certain periods that are marked by spectacular events. This was the case, for example, in the summer of 1943 when the Hold-the-Line Order and the establishment of dollar-and-cent retail ceilings for food products destroyed the expectation prevailing in the spring of that year that price control would break down. In field studies it was found that, in the spring of 1943 and again in the early fall of that year, most business men gave definite and uniform answers to the question as to the probable future course of the prices of their most important products. In the first period they said that prices would "undoubtedly" go up, in the second that they would stay stable. It was also found that these expectations influenced their actions, especially their endeavors to accumulate or not to accumulate inventories.

During many other periods, however—for example, toward the beginning of 1944—the replies to the question as to the future course of prices were predominantly of the "depend-on" type. Business men enumerated various possible developments that might cause prices to go up and others that might result in stable prices; even among merchants who considered the one or the other trend the more probable, only few based their business policies on their expectations. Similarly with sales and profit expectations. There were periods when definite expectations prevailed; for example, in the spring of 1942 most business men expected rising profits and in the spring of 1943—when rationing and forthcoming shortages were the main topics of discussion—lower sales and profits. Other periods, however, were characterized by routine behavior not guided by definite expectations.

"Uncertainty" appears to have (at least) two meanings. It may stand for the absence of definite expectations, or it may imply "lack

of confidence," that is, the presence of concern with future contingencies, of fear, and of definite adverse expectations.[26] The two meanings must be kept apart. The former meaning of the concept is the one toward which the study of expectations must first be directed. Only after the presence or absence of definite expectations is determined can the question of the measurement of expectations be raised.

Quantitative studies of expectations can be undertaken by means of field studies (interviewing). Without discussing here the complex problems of methodology, it should be mentioned that quantification of replies to interviews, and formulation of questions so as to result in frequency distributions, is easier than the qualitative analysis of the replies. Because hasty quantification presents a great temptation, some of our arguments may be summarized in form of a warning to research workers: if, without studying the kinds of expectations and the origin of expectations, we ask such questions as, "What do you think will be the price of wheat next year?" or "How large will the sales of your firm be next year?" we may induce the respondents to give definite answers (that can be presented in a table or fitted into a curve) which *may* give an entirely false picture. But at certain times and concerning certain issues we may find that definite expectations prevail and are susceptible of quantitative treatment. How, in this way, economic projections may be enriched cannot be discussed in this paper.

Only a few types of business expectations have been considered up to now. There are many other types the analysis of which must be postponed to a later occasion. Yet the relevance of the psychological considerations presented in this paper may be shown here by pointing toward a few unsolved problems.

What was said about the subjectivity of data referring to changes in demand applies also to the supply side. Even current costs are to a great extent subjective, being the result of decisions concerning the allocation of depreciation, overhead, sales costs, and so forth; the subjectivity of the evaluation of possible future changes in costs is still more pronounced. Changes in wage rates, or in interest rates, may be relevant considerations for business policy at certain times and with certain businesses, yet the assumption is questionable that definite expectations prevail in these respects at all times.

Still more complex is the problem of investment decisions because investment opportunities are not given but are perceived or not per-

[26] Uncertainty may also mean high dispersion of given expectations (*cf.* A. G. Hart, *Anticipations, Uncertainty, and Dynamic Planning* [Chicago, 1940]). Dispersion of expectations is rightly distinguished by J. Marschak from the probability assigned to an expectation or from the reliability of the estimate that led to an expectation ("Lack of Confidence," *Social Research*, Vol. VIII [1941], pp. 50 *ff.*).

ceived according to the subjective evaluation of past and current data and the presence or absence of certain expectations. No doubt, the decision to start a new business, to build a new factory, or to install new machinery, may result from the emergence of definite expectations. For example, new technological developments that alter cost calculations substantially may lead to a reorientation of business thinking. In other instances, however, the carry-over of old principles might take the place of the arousal of new expectations, and the investment, say, of funds set aside for depreciation may be made in a routine manner. Such investment habits may be broken if new expectations are aroused, which may then lead to genuine decisions *not* to invest.

Of importance is the analysis of expectations referring to actions of others—of competitors, suppliers, customers, or the government. A business man may abstain from raising his prices despite growing demand or higher costs because he expects that his competitors would not follow suit; or he may make an investment because he expects that others would act similarly. In such instances again genuine decisions based on the emergence of new expectations are one but not the only possibility. Expectations as to what competitors or the government would do may also be routine, consisting of carrying over principles that were understood to be appropriate under previous different circumstances. Empirical studies of these problems have hardly ever been attempted.[27]

Somewhat more attention was paid in recent years to the study of consumer expectations. In this field the conclusions drawn from business behavior were found to be applicable. Expectation of shortages and of price increases caused runs on retail stores and hoarding waves, but—fortunately—those expectations prevailed only at certain times during the war, for example, in the spring of 1942 and in February, 1943. Consumer surveys indicate that in most other periods between 1942 and 1945 the majority of consumers had confidence in price control. Some people felt sure of price stability, and others failed to share the opinion that during a war prices inevitably go up. There can be no doubt that the absence of the expectation of price increases reduced the rate of spending and increased the rate of saving during the war.

To believe that consumer expenditures are at all times influenced by definite expectations is not realistic. For example, in the summer of 1945, after the end of the war against Germany but before the end of the war against Japan, it was found that some consumers made genuine decisions on the basis of definite expectations. Some expected that,

[27] See, however, R. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," *Oxford Economic Papers*, No. 2 (1939).

with the end of the war in Europe, qualities of consumer goods would improve soon and decided to postpone certain purchases. Others expected, and feared, that their income would soon decline or that they would become unemployed and decided to step up their rate of saving. Others again thought that, with the end of hostilities in Europe, the need for saving had declined and began to spend more freely. Clearly these decisions resulted from a reorientation of the people's frame of reference based on a certain kind of apperception of new events (V-E Day). Yet in this case the meaning attributed to the new events was not uniform, and for many people there were no new events at all: they did not consider V-E Day a dividing point between the past and the future or a starting point for a new period. They continued their routine behavior.

These brief references to consumer expectations point to a number of unsolved problems. Are the following hypotheses justified? Expectation of good times (of secure employment, rising income) tends to increase the propensity to consume; expectation of bad times tends to increase the propensity to save; expectation of price increases tends to increase the propensity to consume; expectation of price declines (or quality improvements) tends to increase the propensity to save. Only the proposition concerning the effect of expected price increases appears to be proved, but even in this respect the dynamic relationship implied requires further study.[28]

If it is true (a) that the volume of consumption and saving does not follow income in a mechanistic way but depends upon the prevailing expectations, and (b) that one's past experience is not the only factor shaping expectations but expectations can be influenced, then it follows that the propensity to spend and save can be influenced. This can be done, without destroying the people's free choice, by making consumers and business men understand why certain kinds of public and private policies lead to certain results.[29] We must, however, not overlook the difficulties involved in stimulating strong and enduring expectations that would influence people's actions. What Boulding calls the "law of self-justified expectations," namely, that "what enough

[28] In recent literature some of these hypotheses are assumed to be correct. K. E. Boulding writes: 'The expectation of rising prices leads to larger expenditures" (*The Economics of Peace* [New York, 1945], p. 137). S. H. Slichter states: "Optimistic expectations (belief that one's income will rise or that tax rates will fall) encourage spending. Pessimistic expectations (belief that one's income over the long run will fall, that tax burdens will rise, or any other fears for the future) encourage saving" (*Financing American Prosperity* [Twentieth Century Fund, 1945], p. 284 n).

[29] J. M. Clark has recently pointed out that influencing the propensity to spend constitutes "some of the most promising lines of effort" (*Financing American Prosperity* [Twentieth Century Fund, 1945], pp. 95 *ff*.).

costs beginning at 90, 80, and 75 per cent of capacity.[16] Firms reporting decreasing unit costs up to 100 per cent of capacity have also been classified according to the percentage that their labor costs are of total costs, and averages for 4 categories of labor-cost ratios are given.

The following table indicates some differences in the slope of the average decreasing unit cost curve for different industries. The decline is especially sharp for the metal-working firms and for others (full-fashioned hosiery, shoes, and chemicals) at operations between 70 and 90 per cent of plant capacity. For furniture firms, on the other hand, the rate of decrease in unit variable costs is reported to be higher from 95 to 100 per cent or from 90 to 95 per cent of capacity than it is from 70 to 80 per cent or 80 to 90 per cent of capacity.

The answers seem to indicate that the percentage of labor to total cost of production has little direct influence upon the slope of the decreasing unit cost curve at operations between 70 and 100 per cent

TABLE II.—DECLINE IN UNIT VARIABLE COST WITH INCREASE IN SCALE OF OUTPUT

	Increase of operations (in % of plant capacity)			
	95 to 100%	90 to 95%	80 to 90%	70 to 80%
Average for 33 firms with maximum profits at 100% capacity	5.5%	5.7%	7.7%	9.5%
14 furniture firms	6.4	5.9	4.6	5.2
7 cotton-clothing firms	5.6	4.9	6.9	7.5
6 metal-working firms	4.8	7.9	12.5	15.9
6 others	4.7	5.4	9.6	13.9
Average for decreasing cost firms with labor-to-total-cost ratios from				
40 to 60% (6 firms)	4.1%	4.4%	6.6%	8.1%
30 to 39% (6 firms)	2.1	2.3	4.3	5.2
21 to 29% (13 firms)	8.1	7.2	5.8	5.5
12 to 20% (6 firms)	1.9	2.0	4.2	6.2
3 firms with maximum profits at 90, 80 and 75% of capacity				
1 cotton-clothing firm	1.0% rise	1.0% drop	1.5% drop	4.0% drop
1 paint producer	25.0% rise	25.0% rise	10.0% rise	0.0%
1 chemical concern	10.0% rise	? rise	? rise	0.0%

of capacity. The average slope of the unit cost curve for firms with labor-cost ratios from 40 to 60 per cent resembles that of the curve

[16] A total of 17 firms that answered the other questions declined to attempt answers to this one, giving such reasons as "don't know," "no accurate figures," "no exact answers," and "too much theory." In addition, 4 firms gave non-numerical answers that roughly indicated the character of their cost-output relations; their answers are referred to in the text.

for firms with ratios from 12 to 20 per cent. The peculiar slope of the average curve for firms with labor-cost ratios from 21 to 29 per cent apparently is largely explained by the fact that furniture firms predominate, representing 9 of the 13 firms in that classification.

Constant unit variable costs between the range of 70 and 100-per cent capacity operations were reported by 3 firms.[17] In addition, 2 concerns[18] reported such constant costs between 90 and 100 per cent of capacity, and 6 others[19] gave figures showing a per unit cost variation of no more than from 1 to 8 per cent over the whole range from 70 to 100 per cent of capacity. The president of one chemical firm, not included in the above data, replied: "I am not in a position to estimate exact answers, but believe that operating costs in the brackets you outline would vary little. Of course, costs would fall if we increased our operations from 70 to 100 per cent."

As further checks on the replies of the executives, they were asked: "Under normal peacetime conditions, is it possible at times to reduce your operating costs per unit of output by lowering your rate of operations?" Of 44 replies, 43 were "no" and one was "yes." Some replying "no" qualified their answers. One said, "By reducing from more than 100% of capacity to 100%, costs are likely to fall." Another added, "If we work regular hours 100% capacity is point of greatest efficiency and lowest cost but may not be if that involves a great deal of overtime." A number remarked that plant efficiency tends to fall as operations are reduced, that payroll costs do not increase in direct proportion to the volume of operations so that operating costs per unit are lower at higher levels of output, or that operating costs per unit always are lower as 100-per-cent capacity production is approached. The firm answering "yes" gave as its explanation of how lowered operations would permit lower unit variable costs: "Get rid of all incompetent employees, cease selling to chiselers and risky accounts, do more of work instead of paying some one else to do it."

A few of the answers to this question raise doubts as to the validity of the replies of some firms to previous cost questions, particularly those reporting increasing marginal variable costs beginning at 75 to 95 per cent of capacity. Two of the replies may also indicate a failure to distinguish clearly between fixed and variable costs. Nine of the firms reporting maximum profits at 75 to 95 per cent of capacity answered "no" to this question as to whether it was possible to reduce

[17] Two in furniture and one in clothing. To quote from the explanation of two of them: "Our unit cost remains the same if you exclude overhead and fixed charges," and "As long as overhead and fixed charges are excluded, the unit cost would not vary much either way, if any."

[18] One in furniture and one in metal-working.

[19] Three in furniture, two in shoes, and one in metal-working.

unit variable costs by lowering the rate of operations.[20] Those 9 included the 3 firms that reported U-shaped cost curves, with rising unit variable costs beginning at 75, 80, and 90 per cent of capacity. Two of them were the only replying firms in their industries that reported such cost curves below 100 per cent of capacity.[21]

The significant conclusion from the data in this section is that most of the manufacturing firms in the industries covered by this survey apparently have decreasing unit variable costs within the range of 70 to 100 per cent of capacity production—or at least their executive officials believe that to be the case, which is the important factor in determining company policy, whatever the actual facts may be.[22]

If company output and employment policies are based on the assumption of decreasing marginal variable cost up to full capacity operations, much of the economic reasoning on company employment adjustments to increases or decreases in wage rates is invalid, and a new theory of wage-employment relationships for the individual firm must be developed.

The Oxford economists found that a great majority of the business entrepreneurs they questioned[23] "were in profound ignorance" regarding the elasticity of demand for their products and that "answers to questions about increasing or decreasing marginal prime costs were seldom given with confidence."[24] Their sample "erred, if at all, by being biased in favor of well-organized and efficiently conducted businesses," and the entrepreneurs convinced the economists that uncertainty concerning elasticities of demand and marginal prime cost were "'due not to any negligence or lack of zeal for knowledge" on the part of the business men "but to the nature of the case."[25] The economists concluded that the results of their study "seem to vitiate any attempts to analyse normal entrepreneurial behaviour in the short period in terms of marginal curves. They also make it impossible to assume that wages in the short run will bear any close relation to the

[20] The other two of the 11 firms in that category failed to answer this question.

[21] Seven other cotton-clothing firms and 3 other chemical concerns definitely reported decreasing unit costs. The two other paint companies gave no detailed cost figures. One reported maximum profits at 100 per cent of capacity and the other at 80 per cent of capacity.

[22] The T.N.E.C. study of *Industrial Wage Rates, Labor Costs and Price Policies* (monog. no. 5, 1940) revealed that unit labor costs increased as volume fell and declined as rate of operations expanded in the International Harvester Company's plants and in the plants of two paper companies; operating efficiency was lower when volume was small, partly because of more frequent shifting with shorter runs (see pp. xix, xx, 35-37, and 117-19).

[23] Apparently the statements quoted in this paragraph rest primarily on the evidence of 38 of the entrepreneurs interviewed.

[24] R. F. Harrod, "Price and Cost in Entrepreneurs' Policy," *Oxford Economic Papers*, No. 2 (May, 1939), pp. 4, 5.

[25] *Ibid.*, p. 5.

marginal product (or marginal revenue) of the labour employed."[26]

The present author's interviews with business men indicate that most entrepreneurs do not tend to think in terms of marginal variable cost. The heads of manufacturing concerns hiring, say, 50 or more workers consider such a procedure both unnecessary and impractical because (1) they seem convinced that their profits increase as the rate of operations rises, at least until full plant capacity is reached—they have no faith in the validity of U-shaped marginal variable cost curves unless, perhaps, overtime pay is involved; (2) they consider repeated shifts in the size of a plant's working force, or in its equipment, with changes in the relative costs of different productive factors to be impractical, their adjustments to cost changes taking most frequently the form of product shifts that require little, if any, alteration in equipment; and (3) they see the extreme difficulty of calculating marginal variable costs and the marginal productivity of factors, especially in multiprocess industries and under present accounting methods. In thinking about employment in their firm, therefore, they tend to emphasize current and prospective demand for their products and the full-crew requirements for their existing facilities, rather than the current level of wage rates.

III

The practical and technical difficulties involved in attempting to apply the marginal analysis to wage-employment matters deserve more attention than can be given them here. This discussion only indicates some of the problems involved in shifting the proportion of factors in manufacturing plants or in calculating the marginal contributions of factors, and, at the same time, points to certain disturbing data.

There is a lack of good case material on the redistribution of factors purely in response to increases or decreases in wage rates. The very existence of unused plant capacity indicates that it is not feasible to substitute capital equipment for labor; otherwise that would have been done because the use of such idle equipment is practically "costless" in view of the fact that fixed charges on it cannot be avoided.

Most industrial plants are designed and equipped for a certain output, requiring a certain work force. Often effective operation of the plant involves a work force of a given size.[27] Certain techniques of

[26] R. L. Hall and C. J. Hitch, "Price Theory and Business Behaviour," *Oxford Economic Papers*, No. 2, p. 32.

[27] That, for example, is largely true of automatic-machine tending (such as is characteristic of pulp and paper plants, metal and oil refineries, chemical plants, textile mills, etc.) and of assembly-line operations. It is also true that the size of the work force is largely fixed in service lines like banks, rail and bus transportation, theaters, postal delivery, etc.

For the most part there appeared to be little casual connection between increased labor costs and the introduction of capital improvements.[34]

There is no need to discuss at length in this paper the technical difficulties involved in any attempt to discover the marginal product of an added unit of labor in large-scale industry and to impute to that unit of labor its value contribution to a joint, multi-processed product. Such difficulties have been discussed elsewhere in detail by the author.[35] More recently W. J. Eiteman has succinctly explained the "hopeless complexity" that would attend any attempt to apply marginal analysis to modern manufacturing establishments.[36] His demonstration leaves no doubt that it would be utterly impractical under present conditions for the manager of a multi-process plant[37] to attempt, by means of repeated variation in the number of men employed, to work out and equate marginal costs and marginal returns for each productive factor.

IV

The foregoing discussion and data throw light on experience under the Fair Labor Standards act that has been difficult to explain by conventional marginal theory, and they also help to illuminate the answers of Southern business executives to a group of questions on probable adjustments to an increase in their wage rates relative to those paid by competitors in other regions.

For example, the South-North wage differential in the men's cotton garment industry (shirts, collars, nightwear, work clothes, and pants) was reduced, on the average, by one-third between March, 1939, and March, 1941, primarily as a result of the establishment of a statutory minimum of 30 cents in October, 1939, under the Fair Labor Standards act and an industry wage order setting minimum wages in the industry at 32½ to 40 cents (depending on the product), effective in July, 1940; yet between March, 1939, and March, 1941, employment in 180 identical plants increased more than one and a half times as fast in the South as in the North.[38]

[34] See *Industrial Wage Rates, Labor Costs and Price Policies,* T.N.E.C. monog. No. 5, pp. xxv, 25, 42, 53, and 136.

[35] *Economics of Labor* (1941), pp. 175-84.

[36] "The Equilibrium of the Firm in Multi-Process Industries," *Quart. Jour. Econ.* Vol: LIX (February, 1945), pp. 280-86.

[37] A plant in which more than one type of operation or process is performed and which has, therefore, more than one "cost center."

[38] Separate figures for branches of the industry show somewhat varying results. Employment did decrease slightly in Southern plants producing shirts, collars, and nightwear, where the North-South wage differential was being practically eliminated, but in the work clothing and cotton pants branch employment increased more than twice as fast in the South as in the North despite a reduction of more than 50 per cent in the North-South wage differential. See "Earnings in the Men's Cotton-Garment Industries, 1939 and 1941," *Mo. Lab. Rev.,* Vol. LV (August, 1942), p. 349.

The same pressure of minimum wages had similar results in the wood furniture industry. Between October, 1937, and February, 1941, the South-North wage differential was reduced about 7 per cent for 72 identical wood furniture plants, with the establishment of a statutory minimum of 25 cents in October, 1938, and 30 cents in October, 1939, and the setting of minima from 32½ to 40 cents in the principal industries competing with Southern furniture manufacturers for labor.[39] Not only did employment for the industry as a whole increase the most in firms with the lowest average hourly earnings in 1937, where the statutory minima obviously had the greatest direct and immediate effect; but employment in the Southern plants increased 26 per cent, whereas it decreased slightly in competing Northern firms during the period (October, 1937 to February, 1941); and, within the South, employment expanded more than twice as fast in the lower-wage firms[40] whose wages were increased 10 per cent as it did in the higher-wage firms where the increase in wages was less than 2 per cent.[41]

Various factors were, of course, responsible for employment results so contrary to the presuppositions of conventional marginalism in such industries as men's cotton clothing and wood furniture. For the purposes of this paper there is no need to analyze individual cases where the results are so opposite to the expectations of marginal analysis and to assess the responsibility of each factor for those results.[42] Such data

[39] Seamless and full-fashioned hosiery, men's cotton clothing, and cotton textiles.

[40] Averaging under 35 cents an hour in 1937.

[41] The actual changes in hourly earnings and employment in 72 wood furniture plants from October, 1937 to February, 1941, were as follows:

Plants with average hourly earnings in 1937	*Percentage increase in average hourly earnings, 1937 to 1941*		*Percentage increase in employment, 1937 to 1941*	
	U.S.	*South*	*U.S.*	*South*
Under 32.5 cents	11.2%	10.2%	26.3%	29.1%
32.5 and under 35.0 cents	7.6	9.9	38.1	38.1
35.0 and under 37.5 cents	8.3	1.7	30.7	18.5
37.5 cents and over	2.4	1.7	0.4	16.8

Sources of data: *Earnings and Hours in the Furniture Industry, February 1941*, U. S. Bur. of Lab. Stat., Serial No. R. 1330, 1941, Table 3, p. 11, and *Minimum Wages in the Wood Furniture Manufacturing Industry*, Wage and Hour Division of U.S. Dept. of Labor, June, 1941, pp. 24–28. The employment increase for the South of 16.8 per cent was calculated from data in the latter publication on p. 28.

[42] The notion that variations in geographic wage differentials and changes therein fairly accurately reflect geographic differences in labor effectiveness so that "efficiency-wages" are approximately the same for all regions or areas seems to be disproved by a North-South comparison that the author made between wages and labor efficiency in 41 firms with

have been mentioned here merely to indicate that the replies of the Southern business executives discussed in this section do have some basis in fact and experience. Furthermore, furniture and men's cotton clothing concerns constitute half of the 43 Southern firms that gave full answers to a group of questions concerning the adjustments they would make to a sharp narrowing of the North-South wage differential in their industry.[43] The basic question was as follows:

> Suppose that during the first 3 years after the defeat of Japan the average North-South wage differential in your industry should be cut in half, causing Southern wage rates in your line to rise relative to those of your competitors in the North. Assuming no other change in your costs and no decline in the nation's demand for the type of products you manufacture, how would your firm be likely to adjust to such a permanent 50-per-cent reduction in the North-South wage differential?

The executives were requested to rate each factor in terms of the relative importance or share in the total adjustment for which it would be responsible, the rating being in percentage terms on the basis of a composite of 100 per cent. The following list of factors was provided:

a. Install additional labor-saving machinery.
b. Improve efficiency through better production methods, organization, supervision, incentives, workloads, etc.
c. Change the price, quality, or kind of products manufactured.
d. Increase sales efforts so as to expand sales and production.
e. Reduce production by deliberately curtailing output.
f. Other adjustments (please specify).

The replying firms estimated their wage rates to be from 5 to 40 per cent under the average for comparable jobs in the North. The average for all replying was 18.2 per cent, so that the question involves, on the average, an increase of 11 per cent in the wage scale of replying firms in the South, assuming no change in the wage level of their Northern competitors.

As the replying firms are mostly in industries that experienced some narrowing of the North-South wage differential under the National Recovery act and Fair Labor Standards act, their answers are founded on recent experience. Indeed, the replies are extremely helpful in interpreting that experience. They are summarized and classified by

plants in both regions. See a forthcoming article, "Effectiveness of Factory Labor, South-North Comparisons," in the *Journal of Political Economy.*

[43] Ten firms declined to answer this set of questions on the ground that there was at present no differential, or only a negligible one, between their wage rates and average rates for comparable jobs in the North. Four of the 10 were in men's cotton clothing, in which previous figures have shown the North-South differential was rapidly reduced between 1939 and 1941.

industry and labor-cost ratios in Table III. Also, Table III contains a summary for the 11 firms that estimate their wage rates to be from 25 to 40 per cent under the average rates of their Northern competitors for comparable jobs, and it is significant that the averages for those 11 firms (for which the question posits a selected wage increase of 17 to 33 per cent) are very similar to the averages for all 43 firms.[44]

TABLE III.—ADJUSTMENTS OF 43 SOUTHERN FIRMS TO SHARP NARROWING OF NORTH-SOUTH WAGE DIFFERENTIALS, FACTORS WEIGHTED ACCORDING TO PERCENTAGE OF IMPORTANCE

Classification of firms	a (labor-saving machinery)	b (improved methods and efficiency)	c (price-product changes)	d (increased sales efforts)	e (curtail output)	f (other)
Number of firms giving factor weight	35	36	19	31	4	4
Average weight per stressing firm	33%	36%	41%	29%	43%	20%
43-firm average of weights	26.1%	29.6%	17.5%	20.7%	4.1%	20%
Average for 14 furniture firms	19.6	23.2	34.3	17.9	.7	4.3
Average for 7 men's cotton clothing firms	24.3	40.0	17.1	18.6	—	—
Average for 10 metal-working firms	35.0	28.5	5.5	20.0	11.0	—
Average for 12 other firms	27.5	32.4	8.8	24.3	5.0	2.0
Average for 11 firms with North-South wage differential of 25 to 40%	25.0	30.5	10.9	20.0	10.0	3.6
Average for firms with labor-to-total cost ratios from						
40 to 60% (8 firms)	41.9	23.1	19.4	13.1	1.2	1.3
30 to 39% (8 firms)	33.1	28.7	14.4	15.0	6.3	2.5
21 to 29% (10 firms)	17.8	32.8	31.1	18.3	—	—
12 to 20% (9 firms)	22.8	36.2	7.8	26.7	1.0	5.5

The adjustment most frequently mentioned by the 43 firms was factor *b*, improvements in efficiency through better management, incentives, etc. Introduction of labor-saving machinery is the second most significant adjustment according to the results in Table III, and increased sales efforts ranks third. Price-product changes are considered the most important adjustment by some furniture concerns (3 of them

[44] The principal exception is that the factor of curtailing output has an average of 10 per cent for the 11 firms compared with an average of 4.1 per cent for all 43 firms. Responsibility for that result rests on one metal-working firm with a North-South wage differential estimated at 25 per cent, which rated this factor 100 per cent. Elimination of that firm would reduce the average for the factor of curtailing output to one per cent for the remaining 10 firms with large North-South wage differentials. The firm, subsequently discussed, failed to report its ratio of labor costs to total costs so it is not included in the last group of figures in Table III.

placing sole stress on that factor),[45] but for the other firms such changes are considered of minor significance.[46]

It is especially noteworthy that deliberate curtailment of output, an adjustment stressed by conventional marginal theory, is mentioned by only 4 of the 43 firms.[47] Two of them, rating it at 10 per cent, had reported decreasing unit variable costs up to 100 per cent of plant capacity; however, their percentage decreases in moving from 70 to 100 per cent of plant capacity totaled only 8 per cent in each instance. The third firm, rating this factor 50 per cent, is the chemical concern in Table II that reported sharply increasing unit variable costs between 95 and 100 per cent of capacity and maximum profits in peacetime at 75 per cent of capacity. The fourth firm, a fabricator of steel structures and tanks with 125 employees, although reporting maximum profits at 100 per cent of capacity and decreasing unit variable costs between 70 and 100 per cent of capacity, places sole stress on this factor, making the following statement: "Volume of production would be reduced to small sales for a local market. The only reason we can now compete with the large Northern firms is due to the difference in wage scale. They have enormous advantages in freight rates and more skilled type of workman."

That business concerns stress item *b*, improved management and efficiency, may seem surprising to economists, who have generally reasoned as one replying executive, who stated: "Doing all these things is a continuous process with us. I don't see what the wage level has to do with it." Nevertheless, experience under the N.R.A. and the Fair Labor Standards act indicates that the spur of increased wages does lead to improved plant organization. An executive of one of the largest cotton-textile concerns in the South has testified that, under the N.R.A. requirement that the same wages be paid for 40 hours of work as formerly were paid for 55 hours, the firm's actual increase in labor

[45] One furniture executive said he would enter a new field of manufacture of advanced products in furniture and veneers. However, another furniture manufacturer reported: "Such a change would affect us but very little as 90% of our market is in the South."

[46] "Other" adjustments were: "Use only higher skilled employees," "Replace inefficient labor with efficient labor," and "Several."

[47] Yet, reasoning on the basis of conventional theory, D. K. McKamy and John V. Van Sickle argue that elimination of the North-South wage differential by government action would result in "an enormous and legislated growth of unemployment," because "those enterprises in the areas of labor surplus which are unable to earn enough money to pay the imposed wage would have to go out of business or reduce employment to the point where the last workers employed were worth as much as the imposed minimum." See *Statement of D. K. McKamy and Dr. John V. Van Sickle with Regard to the Demand of the Union for Elimination of Geographical Wage Differentials,* Company's Exhibit No. 28, In the Matter of Carnegie-Illinois Steel Corporation, et al., and United Steelworkers of America, Before the Steel Panel of the National War Labor Board, Case No. 111-6230-D (14-1, et al.), June 7, 1944, p. 51.

costs was less than one-third of the expected or calculated increase, the difference being explained by "the utilization of improved machinery, better arrangement of processes and application of skilled labor, and the more adequate scheduling of the flow of production and better selection of raw materials."[48]

Greatest stress on factor *b,* better management and work procedures, is understandable in men's cotton clothing, where the possibilities of making savings through labor-reducing equipment are generally less than in metal-working plants, which gave the factor of additional labor-saving machinery the primary weight.[49] Also, as might be expected the firms with the highest rates of labor to total cost are the ones that place the most emphasis on new labor-saving machinery. Indeed, there is a notable inverse correlation between stress on that factor and the relative importance of labor in total costs. Exactly the reverse is true of the factor of increased sales efforts. Less stress is placed on sales efforts the larger is the percentage of labor in total costs. The implication is that large non-labor costs and increasing returns up to full capacity production bring to the fore the importance of keeping sales up when profits begin to be squeezed.

Economists brought up on the conventional theory may discount the stress placed by the business executives on increased sales efforts, considering it to be an irrational and uneconomic reaction to a wage increase. Previous data on the relationship between rates of output and unit variable costs indicate, however, that such stress on increased sales efforts may have some rationality. It may help to raise and retain output near capacity operations. Data at the beginning of this section indicate that expanding sales, output, and employment may, at times, be one of the results in firms most affected by wage increases. Business men are acutely aware of the fact that unit costs vary with output, that wage rates which seem extremely burdensome at half-capacity operations may not seem unduly high as full-capacity production is

[48] *Textile Industry, Findings and Opinion of the Administrator,* Wage and Hour Division, U.S. Dept. of Labor, September 29, 1939, p. 35.

[49] The possibilities of better management practices have frequently been emphasized in discussions of minimum-wage experience. See, for example, John F. Moloney, "Some Effects of the Federal Fair Labor Standards Act upon Southern Industry," *Southern Econ. Jour.,* Vol. IX (July, 1942), p. 22, and H. M. Douty, "Minimum Wage Regulation in the Seamless Hosiery Industry," *Southern Econ. Jour.,* Vol. VIII (October, 1941) p. 186.

In the seamless hosiery industry, with the introduction of 25-cent and 32½-cent minima in 1938 and 1940, respectively, employment declined more in the firms with average hourly earnings in the lowest wage classifications, largely due to increased use of labor-saving equipment in those firms (see Douty, *Southern Econ. Jour.,* Vol. VIII, pp. 183-89). However, there is no evidence that total output or sales of those low-wage firms, most affected by the wage minima, experienced any decline relative to the average for the industry.

approached. Unlike economists, business executives tend to think of costs and profits as dependent upon the rate of output, rather than the reverse (the rate of output as dependent upon the level of cost).

V

This paper raises grave doubts as to the validity of conventional marginal theory and the assumptions on which it rests. Admittedly the data used are imperfect and are based, for the most part, on opinions of business executives. Many of the replying executives are, however, heads of "small" businesses in highly competitive industries, so that they are good test cases for the theory. There may, of course, be questions concerning the representativeness of the samples, the completeness of the data, the content and character of the questions asked, etc. It may be argued, if somewhat unconvincingly, that business executives as a group do not learn from past experience and do not know their own businesses. Nevertheless, the answers of the replying executives are sufficiently consistent, firm by firm, and so overwhelmingly support certain reasonable conclusions that there can be little doubt about the correctness of the general results.

While awaiting the fruits of further investigation and analysis, the following tentative conclusions can be drawn from the data contained in this paper:

1. Market demand is far more important than wage rates in determining a firm's volume of employment.[50] Indeed, for employment determination, market demand is considered by business executives to be almost five times as important as all other factors combined,[51] and the wage level or changes in wages are considered to be no more important in determining a firm's employment than the level of non-labor costs and changes in such non-labor costs.

2. Most manufacturing concerns apparently are considered by their executives to be operating at decreasing unit variable costs all along the scale between 70 and 100 per cent of plant capacity. Consequently, it is seldom practical for a firm to curtail output (and, therefore, employment) simply in response to an increase in wage rates.

3. In modern manufacturing, a firm's level of costs per unit of product is influenced considerably by its scale of output; the reverse, as assumed by conventional marginalism, is not generally true.

[50] The 56 replying firms gave market demand an average rating of 87.5 compared with an average of 3.8 for the level of wages or changes therein, which, taken literally, would mean that market demand is more than 26 times as important as wage rates in determining the volume of employment of a firm.

[51] The relative importance of market demand was assessed by the executives of 56 firms at 82.5 compared with 17.5 for all other factors influencing a firm's employment. The ratio is 65 to 35 for the 28 firms rating two or more factors (see Table I).

4. Interregional firms, except in rare cases, do not adjust their use of labor and capital equipment to compensate for sectional differences in wage rates. For many manufacturing concerns it is not feasible, or would prove too costly, to shift the proportion of productive factors in response to current changes in wages, in the manner suggested by marginal analysis.

5. The practical problems involved in applying marginal analysis to the multi-process operations of a modern plant seem insuperable, and business excutives rightly consider marginalism impractical as an operating principle in such manufacturing establishments.

6. Of the three adjustments stressed by business executives to meet a rise in wages relative to those paid by competitors, two—better management practices and increased sales efforts—are neglected by conventional marginalism; whereas the adjustment stressed by marginalism—curtailment of output—is considered so unimportant and exceptional as to be mentioned in only one out of every 11 replies. Indeed, experience seems to indicate that, on an individual-firm basis, the adjustments considered important by the business executives may, at times, even result in larger firm employment at a higher wage level.

These tentative conclusions indicate a new direction for investigations of employment relationships and equilibrating adjustments, in individual firms.

A NOTE ON HICKS'S THEORY OF INVENTION

By Gordon F. Bloom*

In his well-known Chapter VI on "Distribution and Economic Progress" in *The Theory of Wages,*[1] Mr. J. R. Hicks elaborates a partial theory of invention which, though incidental to his theory of distribution,[2] nevertheless embodies the use of concepts which have so captured the economist's fancy that the theory of invention has achieved a certain fame of its own. Indeed, the terms "labor-saving" invention, "induced" invention, and "autonomous" invention have become stock in trade to most economists, so much so that they are frequently used without questioning the ultimate theory of technological progress upon which they rest. The Hicksian exposition is based in part upon a dichotomy between the induced invention and the autonomous invention; and in part upon a distinction between the labor-saving and the *very* labor-saving invention. It will be shown in the following discussion that the first classification is not all-inclusive and, in fact, omits, either through obscurity or error, what is a very common type of labor-saving invention. The second classification, while more proper, is mistaken in emphasis. Inductive investigation suggests that the invention whose introduction would have been profitable even if factor prices had not changed is not uncommon, as Hicks supposed, but on the contrary is a frequent occurrence in the favorable environment provided by American industrial enterprise.

Before exploring the intricacies of the theory of invention, a brief résumé of the Hicksian terminology may prove helpful.

Induced Invention[3]—an invention which is made as a result of a change in the relative prices of the factors.

* The writer, at present serving as a Lieutenant in the Navy, is indebted to Professors E. H. Chamberlin, Fritz Machlup and S. H. Slichter for their criticism of certain portions of this paper. Opinions or assertions contained herein are the writer's own and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

[1] J. R. Hicks, *The Theory of Wages* (London, Macmillan, 1932), pp. 112-135.

[2] This paper is primarily concerned with the nature and propagation of invention, rather than with the broader aspects of distribution theory. Although Hicks has revised his earlier definition of elasticity of substitution, he has not, to the writer's knowledge, altered in print the basic propositions laid down in the *Theory of Wages* regarding the theory of invention. As a matter of fact, Hicks prefaced his remarks in his article on "Distribution and Economic Progress: A Revised Version" (*Rev. Econ. Stud.*, Vol. IV, No. 1 [Oct., 1936]), by stating: "I shall say nothing here on the subject of inventions, for I have nothing to add at present to what I have already written on that topic" (p. 1, note 1).

[3] Hicks, *The Theory of Wages*, p. 125.

Autonomous Invention[4]—all other inventions. These, on balance, are assumed to be neither predominantly labor-saving nor capital-saving.

Labor-Saving Invention[5]—an invention which increases the marginal product of capital relative to the marginal product of labor. *Ceteris paribus,* such inventions reduce labor's relative share in the National Dividend.

Very Labor-Saving Invention[6]—a labor saving invention which, if it had been known, would have paid even before prices changed. These inventions reduce labor's relative share and may reduce labor's absolute share if they are sufficiently labor-saving. Such inventions are assumed to be "not very common"[7] and are "the *only kind* which are really dangerous to the real income of labor."[8]

The Theory of the Induced Invention

Just how common Hicks considered the induced invention is not entirely clear from his exposition, because he makes no statement of the relative frequency of induced and autonomous inventions. The *impression conveyed,* however, is that the induced invention is a relatively common variety. It will be remembered that Hicks utilizes the concept of the induced invention to explain the relative predominance of the labor-saving invention in the stream of progress. Since autonomous inventions do not depend upon changes in factor prices, but rather upon scientific and technological developments, he assumes that over a long period they should have no particular bias, either in a labor-saving or capital-saving direction. Induced inventions, on the other hand, are assumed to be predominantly labor-saving, since the more rapid increase of capital relative to the labor force has, according to Hicks, given an impetus to the discovery of means to economize on the more expensive factor. Thus, when the two types are added together, the result is a distinct bias for labor-saving inventions—which is in conformity with observed fact. In other words, the predominance of the labor-saving invention is explained by Hicks as attributable to the phenomenon of the induced invention.[9]

[4] *Loc. cit.*

[5] Hicks, *op. cit.,* p. 121.

[6] *Ibid.,* p. 126.

[7] *Loc. cit.*

[8] *Loc. cit.* Italics mine.

[9] "*The real reason for the predominance of labour-saving inventions* is surely that which was hinted at in our discussion of substitution. A change in the relative prices of the factors of production is itself a spur to invention, and to invention of a particular kind—directed to economizing the use of a factor which has become relatively expensive." *Ibid.,* p. 124. Italics are mine.

Thus, in Hicks's world of invention, autonomous discoveries contribute to the total number of labor-saving inventions, but *the plurality of labor-saving over capital-saving is due to the induced invention.* Now it is quite evident to any student of technological change that the predominance of labor-saving inventions is considerable. Hicks himself concedes that examples of capital-saving inventions are not easy to find.[10] But if capital-saving inventions are comparatively few, then autonomous labor-saving inventions must also be relatively few in number, since, according to Hicks, autonomous inventions do not have any predominant bias. It follows therefore, from application of Hicks's premises, that *most* of the labor-saving inventions which do occur must be of the *induced* category. According to Hicks's definitions, the margin of the labor-saving over the capital-saving inventions is a measure of the frequency of the induced invention. The conclusion seems inescapable, therefore, that Hicks considered the induced invention to be the common type.

How common is the induced invention in actual fact? Ascertainment of the relative frequency of the induced invention through empirical investigation is admittedly a difficult task. Invention is a group process which extends over a long period of years. Conversations with one, two, or three men who have worked on a particular new product or process may fail to reveal the motives which induced the original research endeavor. Nevertheless, inductive study in this field is not without value, and therefore the writer presents the ideas gained from field investigation for what they are worth.

In a series of field surveys conducted in 1941, 1944, and 1945, the writer was afforded an unusual opportunity to discuss with employers the effect of wage increases upon the rate of technological progress. In 1941, the writer personally visited 53 companies in various parts of the country and discussed the effect of wage pressure and related problems with presidents, vice presidents, comptrollers, and plant managers.[11] Information received in this survey was supplemented by replies received to a questionnaire mailed in 1944 to substantially the same firms. In 1945, the writer conducted a survey of industrial research activity; in this investigation, replies to a questionnaire on research and invention were received from 50 companies and, in addition, the writer personally interviewed a number of directors of large industrial research laboratories. Through conversations with employers and research directors, and from replies to questionnaires, the writer was able to obtain a broad sample of entrepreneural opinion concerning

[10] *Loc. cit.*

[11] The writer is indebted to the Social Science Research Council for the grant of a Pre-Doctoral Field Fellowship which made possible this initial investigation.

the degree of sensitivity exhibited by technological discovery to changing factor prices.[12]

On the whole, most of the research men and employers consulted were of the opinion that relatively few inventions are made as a result of changes in wage rates relative to interest costs. That wage increases sometimes act as a kind of "detonator" which spurs the entrepreneur to increased activity cannot be denied, but this consideration appears to have more relevance with regard to the rate of introduction of *known* improvements than to the tempo of technological *discovery.*

This distinction is an important one. As a matter of fact, it is possible that Hicks was led to his erroneous conclusions regarding the frequency of induced invention by confusing the process of invention with mere adaptation to changed cost conditions within a given technique. When the relation of wage rates to interest rates changes, entrepreneurs find it profitable to alter methods of production, but this is not the same as a change in the volume of new discoveries. As Mrs. Robinson has pointedly remarked: "When we say that 'technical knowledge is given,' we do not mean that every entrepreneur has blueprints in his pigeon-holes of every type of machine which it would be profitable to use at each conceivable rate of interest. We merely mean that there is a certain body of technical knowledge which will lead to a certain adaptation of technique to circumstances."[13] Such adaptations are effected within a given production function, whereas invention alters the whole pattern of isoquants in individual firms.[14] There is little doubt that wage pressure stimulates the former type of change in operating technique, but inductive investigation suggests the significance of the stimulus is much less when applied to the process of *invention.*

However, while research executives minimize the importance of the induced invention, as defined by Hicks, they point out that the pressure of costs may "induce" invention in another, and broader, sense. As a matter of fact, *most labor-saving inventions* are "induced," but they are induced, not by *changes* in relative factor prices, but simply by the *continuing high price of labor.* If in the future the rate of population increase should exceed the rate of capital accumulation, this does not necessarily mean that there will be any lessening in the frequency of labor-saving inventions—though such a diminution would seem to be

[12] Considerations of space restrict this note to a criticism of Hicks's theory of invention. In a forthcoming article the writer will discuss more fully the results of these inductive studies as they apply to the relation of wage pressure, research, and the tempo of technological discovery.

[13] Joan Robinson, *Essays in the Theory of Employment* (London, Macmillan, 1937), pp. 134-35, note 1.

[14] Looked at another way, adaptations enter into the determination of the elasticity of substitution, whereas inventions alter it. See Robinson, *loc cit.*

forecast, on these premises, by application of the Hicks theory with its emphasis on relative changes in factor prices. The fact remains that declining unit labor costs have not lessened management's interest in further reducing disbursements to labor. As long as labor cost remains a large item in the expense of modern business operation, labor-saving inventions will still predominate, whether wage rates rise relative to interest rates or not.[15] While labor-saving inventions induced by changes in relative factor prices do occur, inductive investigation suggests they are less common than Hicks supposed. It is probable that changes in relative factor prices would play a more dominant rôle in the motivation of invention if labor costs and capital costs bulked equally large in total costs, but since most production costs are labor costs,[16] invention is naturally biased in this direction regardless of fluctuations in the ratio of prices of the factors.

In view of the fact that payrolls constitute such a large element in business expense, it is understandable why economy in the use of labor is a major item in industry's program for technological improvement. Moreover, the labor-saving invention is probably *easier to discover* than the capital-saving improvement simply because the large proportion of labor costs and manual operations in individual manufacturing units naturally suggests more ways and means by which use of this factor can be economized. Modern industrial invention embodies continuous extension of mechanization, lightening the arduousness of work and progressively increasing the scope of automatism in operation. By their very nature, these characteristics of invention involve labor-saving. Most inventions are labor-saving, because invention represents the efforts of man to make life fuller and easier, and achievement of this goal typically requires the substitution of mechanical power for hand labor.

There is nothing very mysterious about this simple fact, yet in order to explain the predominance of labor-saving inventions, Hicks becomes involved in some highly questionable casuistry. Having postulated that the predominance of labor-saving inventions is attributable to the frequency of the induced invention, Hicks concludes that the remaining inventions—which he dubs "autonomous"—are not likely to

[15] The textile industry in the thirties was characterized by rapid technological change designed to save labor at the same time that the wage level was falling. The Hicksian concept of induced invention does not fit this situation very well, but it is clear that even at the lower wage level, labor was still a sufficiently large cost to induce management to discover means to economize in its use.

[16] In 1921, wages and salaries comprised 35.3 per cent of the value of production in manufacturing, whereas interest costs amounted to only 1.8 per cent; in 1939, the corresponding figures were 30.8 per cent and 0.8 per cent. See National Industrial Conference Board, *Economic Almanac for 1944-45*, p. 196.

have any predominant bias. This thesis, that autonomous inventions will over a long period be free of any predominant bias with respect to the particular factor saved, is not only unrealistic, but also is open to criticism on methodological grounds.

Bias in Autonomous Inventions

In the first place, there is the obvious criticism that inventions are not qualitatively equivalent; even if the *numbers* of capital-saving and labor-saving inventions were equal, their economic and technological significance would hardly be equivalent. One major labor-saving invention may produce more profound repercussions than 20 minor capital-saving improvements—and *vice versa*. If the number of autonomous inventions in each category happened to be the same, but the labor-saving group contained a mechanical cotton picker and an automatic rolling mill, would Hicks say that bias was involved, or not? It is apparent that Hicks's facile assumption that autonomous inventions have no predominant bias conceals a problem of evaluation which admits of no easy solution.

In the second place, assuming that a satisfactory basis for evaluating the bias of invention could be agreed upon, it is still questionable whether autonomous inventions—even as strictly defined by Hicks—would, on balance, exhibit no predominant bias. The problem is fundamentally one of the application of the laws of probability.[17] Given a certain number of inventions whose discovery is not motivated by changes in relative factor prices, it would be expected that, *ceteris paribus*, their distribution would conform to a normal frequency distribution. As Hicks phrases it, "In the absence of special knowledge we may reasonably assume a random dispersion."[18] Using two factors, labor and capital, Hicks concludes that over a long period, the distribution of inventions will be such that about half will fall in the labor-saving category and half in the capital-saving class. This deduction from the law of probability, however, is dependent upon the arbitrary classification of the factors of production which Hicks adopts as unit of measurement along his x-axis. With a different classification of factors, a different conclusion would result.

The process of invention can be studied in relation to various related economic phenomena, such as the costs reduced by technological progress, the factors saved, etc. Viewing the distribution of invention in relation to costs, for example, one might conclude that since, say, four-fifths of manufacturing expenses are labor costs and one-fifth capital costs, it would be expected that four-fifths of inventions

[17] The writer is indebted to Professor E. H. Chamberlin for elaboration of this point.

[18] J. R. Hicks, *The Theory of Wages*, p. 125. It may be questioned, however, whether inventions really are made "at random."

would tend to reduce labor costs while one-fifth would lower capital costs. Similarly, a number of hypothetical relations could be posited regarding the relation of inventions to the factors of production which they save. This is the viewpoint which Hicks adopts, but actually his particular relation is only one—and the narrowest at that—of a wide range which can be postulated. For example, if one adopts a four-fold classification of the factors, consisting of managerial labor, skilled labor, unskilled labor, and capital, then, *ceteris paribus,* on the basis of the laws of chance, it could be expected that one-fourth of inventions would fall in each of these categories so that labor, *in toto,* would embrace three-fourths of all inventions. Of course, this is an arbitrary conclusion resting upon what may seem to be a questionable classification of the factors, but it is no more arbitrary than Hicks's selection of two factors, which naturally gives him a 50-50 distribution. The mere fact that autonomous inventions are not induced by changes in relative factor prices does not necessarily free them from bias. That Hicks reaches this conclusion is attributable in part to his implicit assumption that individual inventions are of equal technologic and economic significance, and in part to his application of the laws of probability to an arbitrary classification of the factors of production.

A Reclassification of Inventions

It seems probable that both induced and autonomous inventions are biased in the labor-saving direction, the former because of the major importance of labor cost in business expense, the latter because of the fundamental nature of the process of invention.[19] Once this fact is realized, there is no need to retain Hicks's narrow concept of the induced invention, for its chief *raison d'être* was to explain the predominance of the labor-saving invention, and this is now seen to depend upon other circumstances. If for purposes of exposition, it is deemed desirable to distinguish those inventions which are "induced" by economic factors from those which are fundamentally attributable to scientific and technological developments, then Hicks's classification must be modified to take account of the labor-saving inventions which are induced, not by changes in relative factor prices, but by the fact that labor bulks so large as a cost in business operation.

The latter class of inventions, which, for convenience, may be termed "high cost induced inventions" is not specifically mentioned by Hicks in his discussion, although they are undoubtedly a very common type of discovery. It does not appear that Hicks intended to include them

[19] Mrs. Robinson also finds Hicks's proposition regarding the lack of bias in autonomous inventions "hard to accept" (*op. cit.*, p. 134, note 1) and points out that "the development of human methods of production, from the purely hand-to-mouth technique of the apes, has been mainly in the direction of increasing 'roundaboutness' " (loc. cit.).

under induced inventions, since he clearly states that induced inventions are discovered as a result of *changes* in relative factor prices. Nor is it evident that he intended to include them in the autonomous category. It is true that he defines induced invention and then places "all others" in the autonomous class; but later he specifically states that autonomous inventions ought not to be either predominantly labor-saving or capital-saving.[20] This would seem to exclude this type of invention, for, as has been indicated, it has a definite labor-saving bias. One is led to conclude, therefore, that Hicks simply overlooked this important type of invention.

Two ways suggest themselves of incorporating this kind of invention in Hicks's schema. On the one hand, inventions can be classified into those which are motivated by the desire to save labor and capital, and those which are not. The latter, which are attributable to scientific and technological developments, and to research in product improvement, may be called "autonomous," but they will still exhibit a labor-saving bias. The other group, the "induced" inventions, would include those discoveries which are induced by a change in relative factor prices, and those which are motivated by the desire to save a factor simply because it represents a large cost. The latter consideration is partly, although not entirely, independent of fluctuations in the price of the factor. If the price of labor were cut in half, it would be expected that both types of induced labor-saving inventions would be diminished in frequency; if, however, only a small change occurs in the price of labor relative to capital—which is the normal course of events —the number of induced labor-saving inventions as defined in the narrow Hicksian sense will be affected, but no material change is likely in the number of "high cost induced inventions."

Another possible method of classification involves retention of the narrow concept of the induced invention, as used by Hicks, and inclusion of the "high cost induced invention" in the autonomous group. Such a classification might be justified on the ground that the former group is sensitive to the relative rates of growth of labor and capital, whereas the latter is not particularly affected by this circumstance. This classification lends itself to exposition of Hicks's theory of economic progress. Thus, following Hicks, it can be said that increasing capital lowers the price of capital relative to labor and stimulates labor-saving inventions of the induced type. While this classification of invention simplifies theoretical analysis of the process by which capital is absorbed into production, it is doubtful if in reality there are a sufficient number of significant "induced" inventions to merit the importance of the rôle given them in this theory of technological progress.

[20] "There is no obvious reason why autonomous inventions should incline on balance, to one side more than to the other." Hicks, *op. cit.*, p. 125.

The Theory of the Very Labor-Saving Invention

The next point involves the concept of what, for convenience, may be called the *very* labor-saving invention, the invention which may reduce not only labor's relative share in the National Dividend, but its absolute share as well. It seems apparent from Hicks's comments regarding such innovations that he believed only induced inventions could be of this type. Thus, he makes the following categorical statement: ". . . neither a great activity in autonomous invention, nor a high elasticity of substitution, has *any* tendency to reduce the real income of labour. The *only* kind of invention which is likely to have this effect is that which . . . is inspired by a change in relative factor prices, but which would have been profitable to apply even before prices changed."[21] In another connection he declares: "Now *induced* inventions of this type . . . may reduce not only the relative share of labour, but also its absolute share."[22] Nowhere does he speak of autonomous inventions which may have this effect. In other words, Hicks assumes that only *induced* very labor-saving inventions pose any danger to labor's real income, and since this type of invention is not supposed to be very common,[23] *it* follows that labor has little to fear from technological progress *per se*.

This sanguine view does not seem warranted by the facts. In the first place, there is no reason why an invention which is *not* inspired by a change in relative factor prices cannot also reduce the absolute share of labor. From the standpoint of the dislocation produced, a labor-saving invention which was *not* induced by a change in relative factor prices, but which would have been profitable to adopt even at a lower level of wage rates, is just as dangerous as one which *was* induced by a change in relative factor prices, but which would have been profitable to adopt even in the absence of the relative increase in the price of labor. Among those new developments which Hicks includes in the autonomous category there may be a device, such as the automatic cotton picker,[24] whose discovery is not primarily attributable to changes in relative factor prices, but whose application would lead to

[21] *Ibid.*, p. 128. Italics mine.

[22] *Ibid.*, p. 126. Italics mine.

[23] *Loc. cit.*

[24] Available evidence suggests that invention of the mechanical cotton picker was motivated not by relative changes in factor prices, but simply by the desire to lighten the arduousness of a very laborious task. John Rust, who filed his first patent on the mechanical cotton picker seventeen years ago, worked with his brother on a cotton plantation and was compelled to devote long hours of back-breaking labor to picking cotton by hand. Being mechanically minded, he sought and discovered an easier way of doing the job. In this case, as with many great inventions, the desire to save labor and to make the job easier was the dominant motive unrelated to changes in factor prices. See Eliot Pratt, "Machine Age in Dixie," *Common Sense* (July 1945), pp. 13-15.

such a large displacement of labor with a relatively small additional outlay for capital that labor's real wage might suffer in consequence. In addition, the labor-saving invention which is induced not by changes in factor prices, but simply by the large cost of labor, may reduce labor's absolute share in the National Dividend, although it does not come under Hicks's definition of an induced invention. If an invention has very great labor-saving potentialities, but yields a comparatively small increment to the National Dividend, the consequent large reduction in labor's relative share may reduce its absolute share and its real wage. This maxim is true whether the invention was induced by a rise in wage levels, or by a new advance in metallurgy. Hicks assumes that the very labor-saving invention is relatively uncommon. The broadening of the concept of the very labor-saving invention suggests the possibility that occurrence of this type of improvement may be more frequent than Hicks had supposed.

Field investigation indicates that the invention which would have been profitable to adopt even at a lower level of wage rates is quite common. For example, in a survey conducted by the writer in 1944, business executives were asked to cite examples of recent important labor-saving improvements made in manufacturing technique. They were then asked whether it would have been profitable to make these improvements if wage rates had remained at 1939 levels. In the majority of cases, the answer was in the affirmative.[25] Apparently many recent technological changes come under the heading of what Hicks calls "methods, which if they had been known, would have paid even before prices changed."[26]

Recognition of the ubiquity of labor-saving inventions which would have paid even at lower levels of wage rates brings us to another shortcoming of Hicks's concept of the very labor-saving invention: namely, that it fails to distinguish clearly between infra-marginality and large labor-saving capacity. On the one hand, the very labor-saving invention is supposed to be one which would have been profitable to introduce even at a lower wage level. This simply means that it is an infra-marginal improvement, but if this is the case, clearly there is no reason why such improvements should be "not very common." On the contrary, it is the marginal improvement, like the marginal ele-

[25] The same considerations apply to the effect of changes in the rate of interest upon the rate of mechanization. As R. G. Hawtrey has pointed out, "In the great majority of cases the new instruments are not marginal, in the sense that they would have been installed at an earlier date had the rate of interest been lower. They usually embody improvements which may raise that yield substantially above the margin." R. G. Hawtrey, *Capital and Employment* (London, Longmans Green, 1937), p. 259.

[26] Hicks, *op. cit.*, p. 126.

ent in all other phases of economic life, which is the exception.[27] Probably only a relatively small proportion of inventions are induced by a change in the ratio of prices of the factors. Hicks was led to the erroneous conclusion that induced inventions were the dominant type, because he was seeking to explain the predominance of labor-saving inventions. As has been pointed out, this circumstance can be explained on other grounds fully consistent with the admission of the prevalence of infra-marginal improvements.

The second part of Hicks's definition of a very labor-saving invention relates to improvements which reduce the absolute marginal product of labor. Actually only a small proportion of infra-marginal improvements will have this effect. In other words, an invention can be such that its introduction would have been profitable at lower wage rates, without necessarily reducing the absolute marginal product of labor.[28] Whether or not a labor-saving invention will reduce the absolute marginal product of labor depends (1) upon the labor-saving capacity of the invention; (2) upon the size of the increment which it produces in total output; and (3) upon the ease with which the displaced labor can be reabsorbed in other parts of the economy. Because large labor-saving capacity is an indispensable condition of an invention which will reduce the marginal product of labor, such an invention will generally be infra-marginal, but not all infra-marginal inventions pose the same threat to labor.[29]

How common are inventions which lower labor's real wage? In classification and evaluation of the effect of invention, it is very important to be specific with regard to the time period which is being considered.[30] Hicks's definition of a labor-saving invention applies to the effect of invention upon the relative marginal product of labor,

[27] For example, most of the buyers and sellers in a market would be willing to make an exchange at other than the final market price. Similarly, most inventions are infra-marginal with regard to their cost-saving capacity.

[28] It is only fair to state that Hicks does not claim that *all* inventions which would have been profitable at a lower wage level will reduce the marginal product of labor. His discussion of the very labor-saving invention is ambiguous rather than wrong. His exact statement is as follows: "But it is certainly quite conceivable that a change in relative prices will stimulate invention to do more than this—to discover methods which, if they had been known, would have paid even before prices changed. Now induced inventions of this type (if they are labour-saving, as we may suppose generally to be the case) may reduce not only the relative share of labour, but also its absolute share." *Loc. cit.*

[29] Capital-saving inventions, which raise the marginal product of labor relative to the marginal product of capital, can also be infra-marginal.

[30] Oscar Lange recognizes the importance of the time element by incorporating it in his definitions. For example, he classifies an invention as "using" or "saving" a given factor *at the date t* according as it increases or diminishes the demand planned for that date. Thus the same invention can be "currently steel-using," "labor-saving after one year," etc. See O. Lange, *Price Flexibility and Employment* (Bloomington, Principia Press, 1944), p. 73. Also, O. Lange, "A Note on Innovations," *Rev. Econ. Stat.*, Vol. 25, No. 1 (Feb., 1943), pp. 19-25

the amounts of the factors being unchanged. The final result when the quantity of capital has had time to adjust to the changed yield may be quite different. Mrs. Robinson, for example, considering the case in which the amount of capital is adjusted to the new technique so that full equilibrium is attained with zero investment, finds that if invention is labor-saving in Hicks's sense, the relative shares will be unchanged if the elasticity of substitution is less than unity.[31] Similarly, in full equilibrium, even a *very* labor-saving invention may increase the marginal product of labor, if account is taken of the increase in capital per head required to restore equilibrium between the marginal efficiency of capital and the interest rate.

One may distinguish three stages in the process of innovation: the "gestation" period during which the new capital equipment is being built; the "operation" period in which the new equipment is introduced and the displaced labor is absorbed elsewhere in the economy;[32] and the stage of full equilibrium in which capital accumulation brings the marginal productivity of capital back to its former level. The first stage will almost always raise the absolute marginal productivity of labor, because new investment increases the demand for its services. The second stage may witness a decline in the real wage of labor if the improvement makes only a small addition to the National Dividend, but by virtue of its large labor-saving capacity drastically reduces labor's relative share in the Dividend. The third stage will almost always witness a rise in the real wage of labor, even in those cases where the very labor-saving invention has reduced labor's absolute share at the second stage. The greater the decline in the relative marginal product of labor, the greater the increase in the relative share of capital in the National Dividend. Consequently, the more labor-saving an invention, the more favorable it is to the yield of capital; and since a rise in the yield of capital will make investment more attractive, ultimately the demand for labor[33]—and therefore its marginal

[31] Joan Robinson, "The Classification of Inventions," *Rev. Econ. Stud.*, Vol. 5, No. 2 (Feb., 1938), p. 139.

[32] This classification follows Lange, who distinguishes two periods: a factor-using period of "gestation" and an output-increasing period of "operation" of the innovation. (See *Price Flexibility and Employment*, p. 74.) However, Lange appears to give inadequate attention to the third period, in which an increase in capital per head is necessary to restore equilibrium.

[33] Mrs. Robinson is pessimistic concerning the long-run repercussions of invention upon employment. Thus, she states, "There appears to be, from the long-period point of view, very strong grounds for the popular opinion that inventions tend to reduce employment." (*Essays in the Theory of Employment*, p. 135.) This conclusion, however, rests upon a questionable assumption; namely, that if labor's relative share in the national dividend is reduced, the level of equilibrium output will necessarily diminish, because of the increase in thriftiness

product—will be increased by the additional capital accumulation which can be traced to the original invention.[34]

This is all very well, the average labor leader will say, if one is willing to wait for the long run. The fact remains, however, that the high labor-saving capacity of inventions in recent years has considerably aggravated the problem of technological unemployment, and posed a real threat to labor's job opportunities in particular industries. Recognition of this fact is in nowise inconsistent with the contention that labor benefits from invention, both in the short period and in the long run. For example, it can not be denied that without the investment in new labor-saving technology which took place during the thirties, total employment would have been much lower than it actually was; for in the short period, the construction of labor-saving apparatus almost always creates a demand for more labor than it displaces.[35] The important point to recognize, however, is that very labor-saving inventions do not necessarily require any more capital investment than less labor-saving improvements. The labor-saving capacity of an invention is dependent upon the technical ingenuity involved rather than the capital investment required.[36]

Consequently, it is possible for the average labor-saving capacity of invention to increase without this change being reflected in an increase in the level of capital expenditures. Thus, if such a change occurs—as some labor leaders maintain has occurred over the last two decades—there need be no increase in employment opportunities in the "gestation" period, but the unemployment problems of the "operation" period will be considerably aggravated. There will be some inventions which are very labor-saving and which actually tend to reduce the real wage of labor as a whole. But the great majority of inframarginal labor-saving inventions—if they are endowed with a high labor-saving capacity—will simply produce a high rate of what economists call "frictional employment." If most labor-saving inventions were induced marginal improvements, as Hick's analysis suggests, frictional unemployment would not create much of a problem, for the labor displaced by marginal inventions is small in amount and there-

[34] Or as Hicks points out, even if economic progress does cause a decline in the equilibrium level of real wages this would only be temporary: ". . . enlarged profits would mean new saving; increased capital would raise the level of real wages again." (*Op. cit.*, p. 130.)

[35] The effect of invention upon employment in the short period will depend upon the extent to which the funds expended represent new investment rather than re-investment of depreciation allowances of old plant.

[36] An electric eye apparatus which makes possible almost 100 per cent automatic operation may require only a small capital outlay, whereas an improvement which displaces comparatively few men may entail considerable investment.

fore the difficulties of transfer and reabsorption are minimized. If, however, it is recognized that most inventions are infra-marginal and that the average labor-displacing potential is high, then the frictional unemployment which results takes on new significance. When five hundred to a thousand persons are thrown out of work in single enterprises[37] by an individual invention, such as the strip mill, and when the ages and skills of these men are such that they cannot easily be reëmployed elsewhere, it seems more realistic to drop the term "frictional" and recognize frankly that this is a problem of technological unemployment attributable to the high labor-saving capacity of recent technical changes.

This does not mean that labor should oppose invention. Such a policy would be short-sighted; for, despite the existence of technological unemployment, the level of employment would probably have been lower had it not been for the added investment in new technology. Labor has a real interest in promoting technological progress, because an active technology is needed to provide outlets for new investment, and adequate new investment is labor's assurance of continued employment and rising real income. The remedy lies in public recognition of the fact that labor's indictment of machine displacement has not been entirely unfounded; that many new inventions are very labor-saving; and that if it is public policy to encourage technological progress, provision should be made to alleviate the distress caused among those labor groups which are most directly affected by technological change.

[37] See H. J. Ruttenberg, "The Big Morgue," *Survey Graphic*, Vol. 28, (Apr., 1939), pp. 266-69.

FAMILY SIZE AND RESIDENTIAL CONSTRUCTION

By ERIC SCHIFF*

The Problem

Whether private investment outlets in the industrial societies of the post-war era will be sufficiently large and numerous to absorb the volume of money saving is still a hotly debated question. At the same time there is fairly general agreement that the volume of aggregate effective money demand for consumers' durable goods will play a strategic part in this problem. This volume is in turn determined by various factors, among which two are by far the most important. One is the number of consumer units (single persons or families); the other is the amount of income which each consumer unit is able and willing to spend for these goods. In recent economic literature there has been a tendency to assert or to imply that, in the long run, variations in aggregate effective demand for consumers' durables are predominantly caused by what we may call the quantity factor—the growth or decline, or the change in the rate of growth or decline, of the number of consuming units—with the income factor playing only a relatively minor part.[1] Quite often this view, combined with the observation that we are living in a period of declining population growth, has led to pessimistic predictions as to the adequacy of investment outlets in the future.

Two questions must be distinguished here. One of them has to do with the *final* results of a declining rate of population growth, *i.e.*, the eventual relative, or even absolute, decline in the number of income-earning units (single adult persons of income-earning age; families the heads of which are potential income earners). This final phase is hardly the problematical one, as far as investment and employment opportunities are concerned. For in this phase the decline in investment and employment opportunities incident to the reduction in consumer demand will *ex hypothesi* be neutralized by the decline in the number of people for whom employment and earning opportunities have to be provided. To the extent that the decrease in the number of investment and employment opportunities is accompanied by a corresponding decrease in the number of competitors for such opportunities, it is difficult to see why the earning chances of the remaining competitors

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[1] See the quotations below, pp. 98-99.

should be adversely affected. This is true at least so long as the number of persons of income-producing and income-earning age does not sink below a Malthusian optimum.

It is in the phase of transition that a real problem may arise. When a decline in the rate of human reproduction sets in, it takes some 15 to 20 years for the above-mentioned long-run effects to materialize. In the meantime, while the number of adults looking for employment opportunities is still undiminished, the reduction in the average size of families brings about certain shifts in the spending and saving habits of the nation. And *if* these shifts mean a net reduction in the demand for capital investment, real difficulties might turn up. During this period, a reduction in investment demand may in fact mean reduced per capita chances of employment and earning for those competing for such chances. The present essay is concerned with the economics of this transitional phase.[2]

The question of whether the shifts in consumer spending that are associated with a decline in family size are bound to result in a net reduction in investment opportunities is a special aspect of the general question of the relative importance of what we have called the quantity factor as compared with the income factor. Most discussion of this subject by economists has so far been highly tentative, but within the limits of this type of reasoning the quantity factor has usually been given greater weight. In this respect, even outspoken opponents of the mature economy theory have been inclined to concede things that are, to say the least, badly in need of qualification. Thus, Wilford T. King admitted:[3] "However, it is, of course, true that the slackening rate of population growth is likely to lessen building volume." Volume in the sense of "number of dwelling units," maybe; but in the question of outlets for capital, the thing of primary importance is the effect of housing demand upon the investment value, rather than upon the physical volume, of residential building. Harold L. Reed, answering King, took the opposite view, but even his statement was in general terms, without any attempt at statistical verification:[4] "In the promis-

[2] The United States, taking account of its general population trend and disregarding possible repercussions of the war, is in such a period of transition. The number of families is not yet declining; in fact, it is expected to increase for some time to come. *Cf.* Lowell T. Chawner, *Residential Building*, National Resources Committee Housing Monog. Ser. No. 1, p. 17. But the average size of families in already decreasing. In 1940 the average size of the American family was 3.78 persons, as compared with 4.10 persons in 1930. ("Families" as the term is here used include single individuals forming a household unit.) *Cf. Housing*, Vol. II, Pt. 1, 16th Census 1940, p. 3.

[3] W. T. King, "Are We Suffering from Economic Maturity?" *Jour. Pol. Econ.*, Vol. 47, No. 5 (Oct., 1939), p. 621.

[4] H. L. Reed, "Economists on Industrial Stagnation," *Jour. Pol. Econ.*, Vol. 48, No. 2 (April, 1940), p. 247.

ing field of cheap residence construction, a leading obstacle to revival is the difficulty workers with large families encounter in saving the margins for down payment necessary to start construction on a scale that would provide an extensive outlet for the saving of others. Shelter provision seems to depend much more on well-being than upon the number of people." A reply to this by Alvin H. Hansen again stressed the predominance of the quantity factor, but was couched in equally tentative and non-quantitative language:[5] "It appears highly probable, as Professor Reed states, that the increased savings which almost certainly would follow from smaller families—a point which, however, is denied by many—would probably encourage more home ownership, and since resident ownership means usually better homes, this would involve a larger per capita investment in housing. While I think this point is sound, I question very much that there is any high probability that the resulting increase in per capita housing investment can offset the decline in total housing incident to a stabilization of population growth." W. B. Reddaway, discussing in terms of general probabilities both the optimist's and the pessimist's arguments as to the effects of a decline in family size upon capital outlay, finally decides to endorse the pessimistic view without, however, attempting any quantitative analysis.[6]

The purpose of this article is to contribute such a quantitative analysis. An attempt will be made to analyze the net influence of family size on housing expenditure, the income factor being held constant. This problem is, of course, only a segment of the general problem of quantity *versus* income as determinants of effective consumer demand. But it is an important segment. In all modern business economies, residential construction is one of the most important outlets for capital seeking investment opportunities. In this country, residential building during the years 1919-1935 absorbed annually from 9.7 per cent to 31.5 per cent of total gross capital formation (excluding repairs and maintenance and consumers' movable durable commodities). The average percentage for the period 1918-1933 was 20.5 per cent.[7] No lengthy explanation is needed as to why this industry has nearly always held a key position in the problem of maintaining a proper balance between savings and investment. Not only is much capital required to finance what may be regarded as the normal number

[5] A. H. Hansen, "Extensive Expansion and Population Growth," *Jour. Pol. Econ.*, Vol. 48, No. 4 (Aug., 1940), p. 583.

[6] W. B. Reddaway, *The Economics of a Declining Population* (New York, 1939), esp. Chap. IV on "Population and Capital Outlay."

[7] S. Kuznets, *Commodity Flow and Capital Formation*, Vol. I (New York, Nat. Bur. of Econ. Research, 1938), pp. 468, 489. Computations based on 1929 prices.

of projects in residential building; the minimum amount of capital without which no single project, however small, can be started, is also relatively high in this field. At the same time, most of the funds invested in residential construction must be provided by "outside" savings; there is here only very limited scope for self-financing. Moreover, the average as well as the minimum labor input required per project is also larger, relatively, than in most other industries. There is every likelihood that in the coming peacetime economy private residential construction in this country will maintain its key position as an outlet for the investment of savings.[8]

In residential building the family is the consumer unit for which the bulk of the supply is being provided. Aggregate effective demand for housing is mainly determined, first, by the number of families to be housed and, second, by the housing expenditure of each family. The principal factors determining this expenditure are (1) the income of the family; (2) the size of the family; (3) the age composition of the family; and (4) the occupation of the head of the family and—to a lesser extent—of other income earners in the family.

In quantitative importance factors (1) and (2), which we are here planning to analyze, undoubtedly rank high above factors (3) and (4). The question we are primarily driving at is this: Other things being

[8] After the last war, private residential building in some European countries lost this key position, and in fact remained paralyzed for quite some time, as a result of rigid enforcement of rent restrictions during a period in which the prices of practically all other commodities and services were skyrocketing. "Real" rents were deeply below the equilibrium level. At the same time national wage and salary systems had become geared to family budgets which, while inflated by the rise of other costs of living, were far below what they would have been if housing expenditure, too, had been adjusted to the currency depreciation. Hence, in order to avoid violent upheavals in wages and family budgets during the first post-war years, the process of raising and finally abolishing the rent ceilings had to be very gradual. Naturally, this protracted period of rents being kept at under-equilibrium levels was a period of almost complete stagnation for private residential building. The rent restrictions as adopted by most of these countries did not, it is true, apply to newly erected buildings. But with the wage and salary system geared to a consumer budget in which rent expenditure was only a fraction of its equilibrium value, tenants could not be expected, even if otherwise they had every incentive to do so, to give up their rent-restricted apartments and to move into new dwellings where they would have had to pay equilibrium rents. New houses built as self-reproducing investment assets would have remained vacant. So long as the rent ceilings remained in force, new dwelling units could be provided only to the extent governmental agencies were able and willing to build houses out of tax receipts, writing off the investment value immediately after the construction was completed. Several local governments have in fact made great efforts in this direction—the housing program of the Municipality of Vienna was perhaps the one that received widest attention—but these efforts could nowhere be pushed to the point where the total demand for new housing would have been satisfied. In the United States, the chances are that the post-war era will be characterized by maintenance, in general, of the traditional system under which the full "real" cost value of the dwelling space including interest and some net profit is normally paid for by those using the dwellings, while public subsidies are being granted only to bring housing facilities of minimum standard of decency within the reach of the lowest income groups.

equal, do large families spend more on housing than do small ones, or do they spend less? Hence, is residential construction as an investment outlet favorably or unfavorably affected by the trend toward smaller families which has been apparent for some time, and for whose early reversal as a general tendency we do not at present have any indication?

No statistical analysis is needed to show that the influence of an increase in family size upon housing expenditure is mainly determined by two forces which tend to counteract each other. On one hand, an increase in the size of the family will generally, though perhaps not in each particular case, increase the desire for space. On the other hand, any increase in the number of non-earning family members which is not accompanied by a rise in family income means a financial strain which will in many cases make it impossible to expand the living space of the family to the extent that would be desirable. This is mainly because other expenditure items, especially food and clothing, have to be increased in the first place when the family grows. Which of the two forces is stronger, and whether their combined influence results in a positive or in a negative net effect of the family size on the size of the dwelling occupied, or on the dollar value of the dwelling the occupying family is willing to pay for, are questions which can only be answered by statistical analysis. *A priori*, the net effect may be either way.

In respect of the physical size of the dwelling, existing statistical evidence gives a fairly clear picture. In given income groups, the number of rooms generally increases with the number of persons making up the household unit.[9] This tendency is largely independent of regional location and of the income group analyzed. At the same time, again independent of regional or income size differences as between groups, the number of rooms does not rise in proportion to the number of occupants; in other words, the average number of rooms per person decreases with increasing family size. The strain under which the budget of large families has to be operated forces them to crowd into dwelling spaces which are relatively smaller, although, in the majority of cases, absolutely larger.

In respect of housing as an investment outlet, the thing that matters is not, primarily, the physical volume, but the money value of the dwelling demanded. Since "shelter" is not a standardized commodity like cement, or a standardized service like street car transportation,

[9] For a statistical verification it is sufficient to glance at the extensive Table 3 "Living Quarters Occupied" in *Family Expenditures in Selected Cities, 1935-1936*, Vol. I, *Housing* (Study of Consumer Purchases, Urban Technical Series, U.S. Dept. of Lab., Bull. No. 648 [Washington 1941]), pp. 132-177. *Cf.* also *Family Expenditure in Chicago, 1935-36*, Bull. No. 642/II (Washington, 1939), p. 42.

the relationship between family size and housing value may well follow a pattern different from that characterizing the relationship between family size and dwelling space. Results of earlier statistical studies on this second question have remained largely inconclusive. Yet, before reëxamining the matter, it is in order briefly to review the attempts that have so far been made.

Earlier Statistical Studies

(1) Tables contained in various volumes of the Study of Consumer Purchases present data on the housing expenditure in 1935-1936 of families of various size and age types.[10] In each of these volumes the evidence as suggested by the tables is discussed in the text, and in each of them the general verdict is that the variations of housing expenditure by family type are partly too insignificant and partly too irregular to indicate a consistent pattern. This verdict is confirmed by the significance tests worked out in the appendices to each volume; nearly all of the tests failed to show that the variations possessed statistical significance.[11] As to the conclusions to be drawn from this negative result, the study says: "It may be that expenditures for housing do not vary more markedly with family composition because differences in type of dwelling and residential section selected by families of varying size tend to offset variations in the amount of space required."[12]

(2) In a study published in 1940, Lorimer and Roback[13] presented an analysis of expenditures for different consumption categories by

[10] U.S. Dept. of Labor, Bull. 642/II, for Chicago; 643/II for New York City; 644/II for 9 East Central Cities; 645/II for 7 New England Cities; 646/II for 6 Urban Communities, West Central Rocky Mountain; 647/II for Selected South Eastern Cities. It should be noted that the breakdown by family types as given in the Consumer Purchases Study is only in part a breakdown by family size; the age of family members comes in, too. The number of persons is 2 in Type I, 3 in Type II, 4 in Type III, 3 or 4 in Type IV, 5 or 6 in Types V and VI, 7 or 8 in Type VII.

[11] Milton Friedman, "The Use of Ranks to Avoid the Assumption of Normality Implicit in the Analysis of Variance," *Jour. Am. Stat. Assoc.*, Vol. 32 (Dec., 1937), pp. 683 *ff.*, tested the statistical significance of expenditure patterns by income size (range of $250) on one hand, and by family size (5 types) on the other, for 246 Minneapolis and St. Paul families of wage earners and lower salaried clerical workers, 1935-1936. The analysis was based on raw material compiled by the staff conducting the Consumer Purchases Study. Housing expenditure was one of the expenditure categories investigated. In the testing, both the analysis of variance and Friedman's method of rank sums were used. The coefficients obtained by either method in respect of the influence of family size on housing expenditure were not even "significant," *i.e.*, they were smaller than the values which would be exceeded by chance once in twenty times.

[12] *Family Expenditures in Nine Cities of the East Central Region 1935-1936*, Bull. 644/II, p. 43.

[13] Frank Lorimer and Herbert Roback, "Economics of Family Relative to Number of Children," *The Milbank Memorial Fund Quarterly*, Vol. XVIII (April, 1940), pp. 114-36. See also Lorimer *et al.*, *Foundations of American Population Policy* (New York and London, 1940).

native non-relief white families of various size types in three areas (Chicago; three middle-sized cities;[14] a sample of farm families in Pennsylvania and Ohio). This analysis, too, is based on material collected for the Consumer Purchases Study. The size classification is by number of children under sixteen years. Again, the figures for housing expenditure fail to reveal any significant variation with family size; the significance test applied by the authors yielded coefficients far below the values required to establish significance even on the $P = 0.05$ level. In respect of the quantitative conclusions suggested by the findings, the authors have this to say: "Apparently the increased housing needs of families with children are just about balanced by increased financial strain, so that proportional expenditure for housing remains fairly constant."[15] In view of the small size of the samples, however, the lack of significance of the variations obtained can hardly mean more than that the conclusion "just about balanced" is not ruled out. To *establish* this conclusion, a broader sampling basis would obviously be required.

(3) Nor did a more recent attempt by R. G. D. Allen to trace family-type patterns of consumer expenditure yield definite results for our question.[16] This is due, in part, to the inadequacy of the Consumer Purchases Study sampling basis, on which even this study relied, and in part to the fact that the family types analyzed are not pure size classes. Moreover, the income brackets for which the author tries to establish expenditure patterns are wider than seems desirable.

(4) In May, 1942, the Bureau of Home Economics of the Department of Agriculture published an analysis, also based on schedules used in the Consumer Purchases Study, of Family Spending and Saving as Related to Age of Wife and Age and Number of Children.[17] Three regional units (North Central Small Cities, Middle Atlantic and North Central Villages, Middle Atlantic and North Central Farms) were covered. The value of the results is limited, first, by the fact that the influence of the size factor has been segregated only in part from that of the age factor. Second, so far as the isolated influence of the size factor is discernible, it is only in the $500-$999 income class that something like a consistent pattern shows, and even here the comment of the authors is rather tentative.[18]

[14] Muncie, Ind.; New Castle, Pa.; Springfield, Ill.

[15] Lorimer and Roback, *op. cit.*, p. 118.

[16] R. G. D. Allen, "Expenditure Patterns of Families of Different Types," in *Studies in Mathematical Economics and Econometrics*, (*In Memoriam* Henry Schultz), ed. Lange, McIntyre, and Yntema [Chicago, 1942]), p. 190 *ff*.

[17] U. S. Dept. of Agric., misc. pub. no. 489.

[18] "Sixty-four per cent of those in the income class $500-$999 lived in 6-room or larger dwellings. But the average value of their housing for the year, $124, was below that of

(5) In the Consumer Expenditure volumes published by the National Resources Committee, an attempt was made to extend by a weighting procedure the sample data collected for the Consumer Purchasers Study, and thus to obtain estimates of expenditure patterns for all consumer units in the United States in 1935-1936.[19] The Family Expenditures volume contains tables which give, for each of four specific income classes, figures of average housing expenditures per family by family types of three sizes (2 persons; 3-6 persons; 7 or more persons).[20] For each of the three broad categories Farm Families, Rural Nonfarm Families, Urban Families, and for the grand total, a separate table was constructed. In the various family categories and income groups with only few exceptions, average annual per family expenditure on housing as recorded in the tables declines with rising family size. The consistence of the pattern is all the more remarkable as the objection of smallness of the sampling basis cannot be raised here. Yet, for two reasons it may be better not to place too much reliance on these results. For one thing, the breakdown by family size groups is fairly rough. For another thing, the statistical methods by which the National Resources Committee arrived at its estimates of nation-wide income and expenditure patterns have been criticized.[21]

The Housing Census of 1940

Late in 1943 a statistical source became available which for the first time offers a chance to obtain a more or less definite answer to our problem. That is the volume *Population and Housing, Families, Income and Rent,* which forms part of the Sixteenth Census of the United States, 1940. Table 3 of this volume presents, for four regions adding up to total continental United States, a detailed series of frequency distributions of families by income classes and by housing expenditures

all but three of the 15 other family composition groups. Perhaps the large families found the space they needed in old houses, lacking some of the modern conveniences and comforts and, therefore, having a somewhat lower rental value than the smaller, more modern homes. Or they may have accepted less desirable locations with lower rents per room." *Ibid.*, p. 27. The source material presented in the extensive tables appended to the study could be retabulated so as to make possible the computation of totals and averages classified, for specific income brackets, by family size alone. Four size classes according to number of children under 16 could be obtained in this way. However, the value of the results would again be open to question because of the small size of the total sample (4921 families in all). The work of retabulation and computation would therefore be justified only if no better sources were available.

[19] *Consumer Expenditures in the United States* (Washington, 1939). *Family Expenditures in the United States* (Washington, 1941).

[20] *Family Expenditures in the U.S.*, Tables 304, 312, 320, 328.

[21] *Cf.* Rufus S. Tucker, "Estimates of Savings of American Families," *Rev. Econ. Stat.*, Vol. XXIV, No. 1 (Feb., 1942), p. 9 *ff.*; "Distribution of Income in 1935-36," *Jour. Am. Stat. Assoc.*, Vol. 37, No. 220 (Dec., 1942), pp. 489 *ff.*

within each specific income class. The tabulation covers all families exclusively dependent on wage or salary income. The analysis units—the four regions—are subdivided into "urban" and "rural nonfarm"; for each of these subunits two tables, one covering owner families, the other covering tenant families, have been constructed. In each of these 16 subgroups, the distribution of the number of families by income classes, and within each income class by actual or imputed monthly rent for housing, is given both for all families and for families comprising specified numbers of persons. This last-named breakdown shows 7 family size classes (number of persons in family: 1, 2, 3, 4, 5, 6, 7 or more).

Thanks to this triple cross tabulation of frequency distributions of families by family sizes, by income brackets, and by rent classes, it is possible to compute the median monthly rents[22] for different family size types within each of 5 income classes in each of 16 analysis units. The behavior of the median housing expenditure, or housing value, with varying size of family may thus be examined all the way through from the smallest to the largest size type for each of 80 analysis groups. Each of these groups is independent of all others, and their sum represents, regionally, the total and, structurally, a very large cross section of the nation. The following table shows the coverage of the material which will be analyzed:

Families of Two or More Persons

	Owner Families	*Tenant Families*	*All Families*
(1) All families, 1940 Census	13,871,980	17,670,140	31,542,120
(2) Urban and rural nonfarm families	10,334,700	14,513,840	24,848.540
(3) Urban and rural nonfarm families exclusively dependent on wages and salaries	4,897,460	9,471,660	14,369.120
(4) Of which analyzed here	3,888,640	7,721,940	11,610,580
(5) (4) in Per cent of (1)	28.03	43.70	36.81
(6) (4) in Per cent of (2)	37.63	53.20	46.73
(7) (4) in Per cent of (3)	79.40	81.53	80.80

With a coverage such as this, there is no danger that quantitative conclusions from the results will have to be confined to a *non liquet*. If no consistent and statistically significant pattern is obtained, the "just about balanced" conclusion will be valid; in the opposite case, quantitative inferences from the properties of the pattern will be possible.

The results of the computations may be seen from Tables I and II

[22] Computation of average rents is not possible, as the highest rent class invariably is an open-end class (*e.g.*, "$40 or more").

in the Appendix (on pages 111 and 112). Before discussing the results, a few remarks are in order about certain properties of the basic material.

In Tables I and II only families in the sense of household units comprising at least two persons are included. One-person families[23] have been disregarded. In the size classification of the Census only the head of the family and persons related to the head by blood, marriage or adoption, are counted, whereas lodgers, resident servants, guests, and foster children or wards are omitted. It is unlikely that inclusion of these latter groups would result in a substantially different frequency distribution. The Census classification of family sizes by "number of persons in the family" is by no means identical with a classification by number of children, still less with a classification by number of children under income earning age, which in some respects would be the best classification for our purpose. The degree of divergence increases with the family size, as will be seen from the following table:

Families, Comprising Specified Numbers of Persons, with Married Male Head and Wife Present (Total U. S.)[a]

	Number of Persons		
	3	4	5
(1) All Families	6,450,080	5,389,100	3,301,860
(2) Families where all members other than head and wife are children under 18	4,174,660	3,094,660	1,523,020
(3) (2) in Per cent of (1)	64.7	57.4	46.1

[a] Computed from the 16th Census volume *Population, Families, Types of Families, Regions and Cities of 1,000,000 or More* (Washington, 1943), Table 3.

Hence, patterns of housing values by family sizes as derived from Census statistics may only with some caution be used for conclusions as to the influence of the rate of population growth upon housing demand.[24] It is unlikely, however, that the possible distortion involved is important.

[23] In the Census, a person living alone is counted as a one-person private family.

[24] For "Families, Male Head, Married, Wife Present" the 1940 Census indeed presents frequency distributions by different numbers of children under 21 analogous to those presented for "All Families" by different numbers of persons in family. Hence it would have been possible to compute the median rents for the first-named size classification just as well as for the latter. This idea was, however, rejected for various reasons. The group for which the size classification by number of children is given represents a far smaller section of all United States families than does the group which was subdivided by number of persons. In the former group, the first class ("No Children Under 21") comprises both one-person families and childless couples, without any possibility of segregation. The breakdown by children under 21 is far less complete (no children; 1 child, 2 children; 3 or more children) than the breakdown by numbers of persons. The maximum age of children included being 21, even the breakdown by "children" would not eliminate with sufficient reliability semi-independent income-earning family members.

The rent classes from which the medians were computed are based on the reported contract rent of tenant-occupied dwelling units, and the estimated rental value of owner-occupied dwelling units.[25] A source of bias which cannot be removed lies in the fact that the contractual rent sometimes includes and sometimes excludes compensation for services other than the shelter itself (furnishings, fuel, light, refrigeration). However, as the shelter rent proper is always by far the largest item in the contractual rent sum, it is unlikely that a computation based on this item alone would have yielded a substantially different distribution pattern.

As for the income classes, the open-end Census class "$5,000 or more," and the lowest Census class "$1.00 to $499," have been omitted. The $1.00 to $499 class presumably includes families whose rent payments are subsidized by local housing authorities; to the extent that this is true the rents recorded would not be indicative of effective demand for housing as displayed by self-supporting consumer units. When these two classes are omitted, there remain the five classes tabulated. Their ranges ($500 in the first three classes, $1,000 in the fourth, $2,000 in the fifth) are the narrowest ones available from the statistics. Within each given class, the possibility of an unequal distribution of income sizes by family sizes cannot be excluded. There is reason to assume some such inequality since, presumably, the larger family size groups are more heavily weighted with incomes near the upper end of the class range. It seems probable that the number of members other than the family head who contribute to the family income is larger in the large-family size groups than in the small-family groups. When interpreting the rent expenditure patterns obtained, the probability of family income within given class intervals being distributed somewhat unequally among the family size groups must be borne in mind. We shall see, however, that in our particular case this probability actually increases the statistical reliability of the findings.

With these considerations in mind, we may now turn to the results. They indicate, with a degree of uniformity which is unusual and indeed striking, that the value of the housing accommodation which a family is able and willing to pay for is the smaller the greater the number of family members. As will be seen from Tables I and II, this pattern is independent of regions, tenure, and income brackets. Ranking the rent medians in each of the 80 rows in our tables from left to right, *i.e.*, in rising order of family size types, we find 48 rows, or 60 per cent of the total, where the ranks of the rents are declining all the way from the smallest to the largest family size (rank order of family sizes: 1,

[25] For dwelling units for which no money rent was paid, the estimated monthly rental value based on the monthly rental paid for similar dwelling units in the neighborhood was reported. *Population and Housing*, p. 2.

2, 3, 4, 5, 6; rank order of median rents: 6, 5, 4, 3, 2, 1). Even in the remaining rows, the number of "exceptions" is very moderate; in relation to the total number of pairs of observations, it is exceedingly small.[26] In fact, of 400 pairs of adjacent family sizes, 358, or 89.50 per cent, are cases where the median rent is smaller for the larger family size and larger for the smaller size.

Examining family sizes differing from each other by 2 persons, 313 out of a total of 320 size pairs, or 97.81 per cent, are found to be cases where the correlation with the corresponding pairs of rent medians is inverse. For family size pairs differing by 3 persons, the number of cases showing inverse correlation with the corresponding pairs of rent medians is 239 out of 240, or 99.58 per cent. In the owner group the percentage of "exceptions" is even smaller than in the tenant group (10.5 per cent as against 12.5 per cent of the total, for 1-person differences in family size). The rate of decrease in housing value with rising family size is also in most cases greater for owner families than for tenant families.

It is obvious that the probability, mentioned above, of the large-size family groups being relatively overweighted with incomes near the upper ends of the income class ranges makes the negative associations which we obtained even more convincing. Had we obtained positive correlations between size groups and rent medians, it could have been argued that the result was partially due to a relative preponderance, in the large-size groups, of incomes near the upper class limits. Hence, such positive associations could have been interpreted only with caution as indications of an expenditure pattern determined by family size alone. At the same time, the factor just discussed reinforces the validity of this interpretation in respect of negative correlations such as have actually been obtained throughout. It is, in fact, quite remarkable that the pattern is not more blurred in the two highest income brackets with their wide ranges. If the intra-class distribution of family income by family size groups were really equal in these brackets, the computations probably would have yielded an even more marked negative association of rent medians with family sizes. The results as actually obtained presumably understate the true pattern.

Conclusions

As a result of the preceding analysis, it may now be regarded as definitely established that in its effect on the money value of the shelter demanded, the financial strain pressing upon the expenditure budget

[26] Among the 40 rows in Table I (Tenants), the number of rows with "undisturbed" inverse rank order is 23, or 57.5 per cent; among the 40 rows in Table II (Owners) it is 25, or 62.5 per cent.

of large families outweighs the increased need for space. While the dwelling space occupied by larger families is normally greater, the effective money demand for housing and, consequently, the amount of capital that can be remuneratively invested in residential building are larger—other things being equal—when the nation is predominantly composed of small families than when large families prevail. To the extent that it depends on residential construction as an investment outlet, the problem of maintaining a proper balance between saving and investment[27] will, therefore, be eased by a continuation or a reinforcement of the present tendency toward smaller families, and aggravated by a weakening or a reversal of this tendency.

Inasmuch as the family size is determined by the birth rate, our results are a contribution to the question of whether a declining rate of population growth is bound to result in reduced investment opportunities during that transitional period in which the decline in the average size of families is not yet accompanied by a decline in the number of earning units for which investment and employment opportunities have to be provided. The outcome of our analysis shows once more how important it is in discussions on this question to remember that want is not effective demand, and that the main determinants of the one are not necessarily the main determinants of the other. For the volume of consumer want in an economy, the physical number of demand units is always of primary importance. Housing want, as we have seen, is no exception. However, for the volume of effective consumer demand, which is the thing on which the volume of investment opportunities depends, other factors such as income or, for given incomes, the proportion in which they are being budgeted on highly investment-requiring and less investment-requiring expenditure lines, may be more important.

Since housing expenditure is only one of the channels through which changes in family size affect investment opportunities, it would be desirable, in order to obtain a more complete picture, to work out similar analyses of family size/family expenditure patterns in respect of other major expenditure groups (food, clothing, automobiles, etc.). It is, however, doubtful whether in the net effect on capital demand the negative association of family size with the highly investment-absorbing demand for housing can be outweighed by positive associations which might be discovered for other expenditure lines.

In discussions on the economic consequences of a declining birth

[27] We are here using the "common" terminology, and not that of the Keynesian school which, while specifically interested in the real problems commonly referred to as implications of a possible divergence between saving and investment, prefers to treat these problems in a terminology which makes saving and investment equal by definition.

APPENDIX

TABLE I—MEDIAN MONTHLY RENTS PAID BY TENANT FAMILIES COMPRISING SPECIFIED NUMBERS OF PERSONS, FOR EIGHT ANALYSIS UNITS

Analysis Unit[a]	Income Class	Number of Persons					
		2	3	4	5	6	7 or more
I		$22.83	$21.96	$21.65	$21.10	$21.53	$21.12
II		14.26	13.28	13.40	13.36	12.55	12.47
III		18.56	17.54	17.27	17.07	16.50	16.39
IV	$500	10.96	10.60	10.41	9.48	9.25	9.01
V	to	12.69	12.50	12.66	11.93	11.55	10.66
VI	$999	6.80	6.83	6.71	6.50	6.46	6.19
VII		20.46	19.27	17.79	17.39	16.20	15.43
VIII		13.38	12.53	12.13	12.69	9.26	9.59
I		26.69	25.33	25.03	24.55	23.81	22.44
II		17.63	17.17	16.27	15.90	15.00	14.89
III		24.23	22.47	21.95	20.05	20.11	19.20
IV	$1,000	15.95	15.01	14.85	15.00	14.18	13.54
V	to	18.97	18.08	17.08	16.29	15.77	14.91
VI	$1,499	11.12	11.09	10.19	9.65	8.92	7.34
VII		25.00	23.60	22.63	21.29	18.89	18.43
VIII		16.51	16.34	15.64	15.08	15.23	11.85
I		31.44	30.74	29.01	28.08	26.74	25.36
II		22.67	23.75	22.33	20.25	18.18	17.09
III		28.96	28.13	26.77	25.58	25.65	23.32
IV	$1,500	18.87	18.43	18.09	17.98	17.10	16.38
V	to	24.88	23.84	23.09	20.13	19.81	18.02
VI	$1,999	16.85	16.94	16.26	16.11	15.34	15.38
VII		28.47	27.64	26.82	26.02	23.83	23.48
VIII		20.73	19.80	18.59	17.44	16.79	16.05
I		38.28	37.36	35.77	34.04	31.22	28.50
II		28.64	28.25	27.21	24.60	21.19	19.96
III		35.80	34.96	33.46	30.64	29.02	26.97
IV	$2,000	22.69	24.03	24.06	21.78	17.46	18.06
V	to	31.18	30.78	28.95	26.58	23.76	19.87
VI	$2,999	19.63	19.64	18.14	17.74	16.65	15.87
VII		33.68	33.21	32.46	30.14	25.75	26.56
VIII		23.93	23.26	22.52	23.39	19.53	18.33
I		48.44	48.49	46.20	42.27	39.48	34.57
II		43.09	42.50	37.59	35.43	29.39	26.94
III		44.86	44.63	42.87	38.74	36.55	32.56
VI	$3,000	29.39	36.67	28.93	26.89	27.14	25.92
V	to	44.09	41.80	39.76	35.15	29.38	28.70
VI	$4,999	29.50	30.24	28.18	28.42	26.28	29.63
VII		39.93	40.90	41.62	37.00	36.18	33.26
VIII		29.42	29.26	28.84	27.78	24.29	25.91

[a] The analysis units have the following meaning: I, North East Urban; II, North East Rural Nonfarm; III, North Central Urban; IV, North Central Rural Nonfarm; V, South Urban; VI, South Rural Nonfarm; VII, West Urban; VIII, West Rural Nonfarm.

TABLE II—MEDIAN ESTIMATED MONTHLY RENTAL VALUE OF DWELLINGS OCCUPIED BY OWNER FAMILIES COMPRISING SPECIFIC NUMBER OF PERSONS, FOR EIGHT ANALYSIS UNITS

Analysis Unit[a]	Income Class	Number of Persons					
		2	3	4	5	6	7 or more
I	$500 to $999	$28.50	$27.91	$28.26	$27.31	$27.04	$22.02
II		18.28	16.00	15.46	15.28	11.91	13.39
III		21.46	20.57	19.41	19.79	17.31	15.35
IV		13.00	11.19	9.73	9.89	8.87	8.26
V		15.38	14.41	13.99	12.25	10.90	8.95
VI		9.20	8.77	8.17	7.66	7.06	6.71
VII		21.59	19.17	17.46	17.91	16.56	14.77
VIII		11.74	10.26	9.31	9.55	10.00	7.12
I	$1,000 to $1,499	32.95	30.90	29.05	28.59	26.76	26.08
II		24.24	21.77	21.08	19.58	19.31	16.32
III		27.12	25.94	24.62	23.85	22.34	20.49
IV		17.32	17.49	16.72	14.93	14.61	13.85
V		23.28	21.22	19.45	18.17	16.67	14.67
VI		15.71	15.74	13.75	13.47	11.61	9.95
VII		26.02	24.36	23.85	21.55	21.79	16.66
VIII		17.72	16.60	15.88	16.61	14.44	12.44
I	$1,500 to $1,999	36.99	35.84	33.98	33.18	30.79	27.20
II		29.83	27.93	27.24	26.43	23.97	19.57
III		32.82	31.89	30.12	29.23	27.05	26.47
IV		22.72	23.03	21.23	19.71	19.81	18.13
V		28.51	27.77	26.35	23.98	22.62	19.28
VI		20.66	19.84	18.94	17.86	17.64	16.59
VII		32.29	32.11	30.46	27.89	25.43	20.64
VIII		24.21	23.01	22.15	21.81	18.35	17.62
I	$2,000 to $2,999	43.88	41.72	40.33	39.15	36.22	32.52
II		39.65	37.04	34.01	30.20	28.76	26.58
III		28.81	27.49	26.58	25.24	22.74	20.59
IV		29.83	29.02	27.79	24.92	24.20	20.00
V		35.68	35.47	32.96	29.69	27.97	25.68
VI		30.53	28.27	26.70	23.33	19.70	18.04
VII		37.58	37.67	36.74	34.11	31.91	27.36
VIII		28.04	28.12	27.82	26.17	22.58	21.52
I	$3,000 to $4,999	54.22	51.06	50.12	44.84	43.13	38.52
II		51.56	51.83	46.23	37.78	36.15	30.02
III		48.91	46.30	43.18	39.81	37.03	35.86
IV		39.12	37.89	36.94	30.63	31.67	28.83
V		49.08	47.47	42.96	39.76	36.91	33.80
VI		49.85	42.13	40.63	35.47	28.87	27.42
VII		48.22	44.21	45.19	42.56	36.82	35.18
VIII		40.42	36.55	34.81	34.56	26.45	26.67

[a] See note, Table I.

THE SOVIET UNION'S WAR BUDGETS

By Theodore A. Sumberg*

About two weeks before V-E Day, on April 24, Finance Commissar Arsney G. Zverev submitted the budget estimates of the Russian government for 1945 to its Supreme Soviet. He also offered a survey of previous wartime budgets. He presented the 1944 budget figures a year before after an absence of budgetary information in the two previous years and, for that matter, after a complete blackout of official information on Soviet war finance since 1941. The fairly complete series on Russian budgets now available for the first time for the whole period of the war presents a unique opportunity to learn something of the economic basis of the Russian war effort.

I

There is a strong parallelism of experience in the war economies of the Soviet Union and its Western allies. But this does not show up in an equally strong parallelism of war budgets. The reason is that the Soviet budget is different in a number of ways from other national budgets.

The Soviet budget is made up on a consolidated basis and includes the revenue and expenditure accounts of the federal government and, to some extent, of the governments of the Soviet republics and local units. The unconsolidated portion of the republican and local budgets, though not uniform year to year, is usually small.[1] The general principle governing the relationship between the two budgetary systems is that local administrative expenses and the financing of the development of light industries, as officially defined, falls to the responsibility of the republican and local budgets, while the financing of defense, other indisputably national activities, the development of heavy industries, and the administrative expenses of the federal and republican governments is borne by the state budget. Some activities, such as "social and cultural measures," are jointly financed in proportions fixed by the central authorities. Since republican and local governments have certain tax collecting responsibilities, it is their practice to remit definite percentages of their tax receipts to the central budget and, at the same time, to receive in return state budgetary grants to be used for approved

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[1] Wartime information on this portion is so scanty that it may be neglected in the account that follows.

purposes within their territory. The result of the central budget's consolidation is obviously to make it more inclusive of the nation's total expenditures and revenues than is true of the budget of any other government, whether centralized or federal.

The same result is achieved in more substantial fashion by virtue of the fact that the central government directly operates economic enterprises and that part of the profit receipts and the working capital and capital development expenditures of these enterprises are included within the national budget. This is so at least with respect to heavy industries, for part of the capital outlays and profits of light industries are similarly incorporated within republican budgets. The central budget may, therefore, be understood to include part of what is equivalent in the United States to corporate reserve funds, derived from profits and devoted to capital expansion. In the Soviet economy this expansion is also financed in smaller degree out of "corporate reserves" retained by the enterprise and not consolidated with the state budget. The Soviet budget obtains its part of the profit receipts of state establishments through special taxation taking advantage of the government's monopoly ownership, that is, by an unchallenged markup of the price of goods and services (the so-called turnover tax) and by a profits levy. The result of this inclusion within the Soviet budget of a portion of "corporate reserves" is another reason for its substantially greater participation in the collection and distribution of the nation's output than elsewhere. It is estimated that in 1931 no less than 42.9 per cent of the national income passed through the central budget.[2] No other country has had a similar percentage except for the recent war years, when the percentage of Russian national income circulating through the state budget also rose.

Statistics on Russian national income are much too scanty to make possible a detailed breakdown of its budgeted and non-budgeted portions. It is helpful, however, in understanding the place of the budget in the Russian national economy to list briefly the main respective portions. Obviously, the wages and pensions and the purchase of supplies incurred in administering the government are included in the budget; minor transfer expenses connected with the public debt service are also included; the net receipts and expenditures of the state's railway and communication facilities; defense expenditures; communal consumption in the form of government expenditures for social and cultural measures, as they are called; and, finally, part of the funds for working capital and capital expansion of heavy industries and other state enterprises (state farms, for instance).

[2] A. Baykov, "Remarks on the Experience in the Organisation of 'War Economy' in the U.S.S.R.," *Econ. Jour.*, Vol. LI, No. 204 (Dec., 1941), p. 424.

Outside the budget are mainly the consumption expenditures for goods and services of the population; the part of the working funds and capital expansion of heavy industries and state enterprises that is self-financed out of its own retained profit accumulations; the capital funds of light industries both self-financed and carried by republican budgets; and the operating and most of the capital expenditures of the minor non-socialized enterprises. The capital development of the collective farms, which are not state enterprises, is made mainly from their own financial resources but partly from the budget. No personal savings are included in the non-budgeted portion of this account because they are already represented in the budgeted funds for defense and capital development.

II

The record of budgetary expenditures from 1938 through 1945 (estimated) is shown in totals and in percentages in Tables I and II.

TABLE I—U.S.S.R. STATE BUDGET, EXPENDITURES, 1938, 1940–45[a]
(in billions of rubles)

	1938	1940	1941	1942	1943	1944	1945
Defense[b]	27.5	56.0	70.9	108.4	124.7	137.9	137.9
National economy	57.1	57.1	73.2	n.a.	31.1	49.0	64.6
Social and cultural measures	35.3	43.0	47.9	n.a.	37.7	51.1	66.1
Administration	5.3	6.8	7.1	n.a.	n.a.	7.3	9.5
Other[c]	4.2	11.4	16.9	n.a.	n.a.	17.7	27.2
Total[d]	124.0	174.3	216.0	n.a.	210.0	263.0	305.3

[a] Based on budget reports of the Commissar of Finance, gathered from the following sources: *Pravda*, April 25, 1945, pp. 2–3; *Foreign Commerce Weekly*, May 19, 1945, p. 50; *Economist* (London), May 5, 1945, pp. 586–87; *Economist* (London), February 5, 1944, pp. 179–80; and A. Yugow, *Russia's Economic Front for War and Peace* (New York and London, 1942), pp. 126, 137. The few slight discrepancies for the earlier years were resolved in favor of the later source. The 1944 figures are preliminary and the 1945 figures only estimates (in the past close to actual sums) approved by the Supreme Soviet.

[b] Including the Interior Commissariat, its expense for 1938 amounting to 4.3 billion rubles.

[c] Includes debt service, reserve funds, and other minor items.

[d] The 1945 figure was raised to 307.7 billion rubles by the Supreme Soviet, according to the *International Labour Review*, July 1945, p. 49.

The rise of 112 per cent in total expenditure levels from 1938 to 1944 is comparable to the rise in gross national product for the same years in the United States (some 145 per cent) and in the United Kingdom (77 per cent), taken together. But the Russian performance in matching the Anglo-American record is somewhat surprising on a number of grounds. For one thing, Russia's war economy antedated the war, its defense expenditures rising steadily from 3.5 billion rubles in 1933 to 56.0 billion in 1940, and one would therefore not expect a doubling

of a sizable part of its national output within six years. The loss of the highly-developed western areas would even lead one to expect a general budgetary decline, just as the reconquest of these areas and the start of their reconstruction is partly responsible for the record total expenditure levels for 1944 and 1945.

TABLE II—U.S.S.R. STATE BUDGET, EXPENDITURES, 1938, 1940–45[a]
(percentage)

	1938	1940	1941	1942	1943	1944	1945
Defense	22.2	32.1	32.8	n.a.	59.4	52.4	45.2
National economy	41.7	32.8	33.9	n.a.	14.8	18.6	21.2
Social and cultural measures	28.5	24.7	22.2	n.a.	18.0	19.4	21.7
Administration	4.3	4.0	3.3	n.a.	n.a.	2.8	3.1
Other	3.4	6.5	7.8	n.a.	n.a.	6.7	8.9
Total	100	100	100	n.a.	100	100	100

[a] Same as Table I.

Apart from an undoubtedly large increase in real output in unoccupied areas, including industrial areas mushrooming up in the Urals, the large percentage rise must be due in no small part to price advances. It is a fair guess that the Soviet government did not have more than twice the real resources available to it in 1944 as in 1938. However, the estimated increase from 1944 to 1945, if it is realized, cannot be laid to a depreciating ruble if scattered reports of price stability in the earlier year and of sharp declines after V-E Day are to be believed.

The extent of the wartime price advance, though undeniably greater than in the United States and Great Britain, cannot be estimated with any accuracy, for no price indices have been published in Russia since 1931. It is known, however, that, owing to its forced industrialization and its active military preparation, the Soviet economy always has had an inflationary bias. That this bias should be strengthened under the severe strain of war, by enemy occupation and looting of its richest regions, and by a general transport upheaval is no surprise. The price inflation—apparently unaccompanied by panic psychology—has showed up not only in the legal open markets,[3] where the authorities permit sky-rocketing prices, but also in official markets which have had to absorb new taxes on merchandise, some of them raising prices by more than 100 per cent. The budget figures must, therefore, be read with a certain but indefinite amount of price increase in mind.

It is no surprise that defense constitutes the single most important

[3] These markets include only a small portion of the total volume of retail trade. The average Russian is used to them, however, and the reported widespread trading of the Russian soldier in the black markets of eastern Europe may seem only "natural" to him.

item in the budgeted expenditures. It made up almost 60 per cent of total expenditures in 1943. Actual budgeted military expenditures are considerably higher, however, as not a small portion of national economy expenditures is devoted to the construction of armament facilities and for other military purposes. No computation of Russian war costs can overlook this fact. Another fact which should also be kept in mind—were available data adequate enough to permit a comparison of Russian with British and American war costs—is that the full extent of the Russian war effort represented a diversion of resources otherwise going to consumption and investment, while Great Britain and especially the United States were able to use for war purposes a portion of their resources that would otherwise probably be idle.

As Table I shows, there was only a modest increase in defense expenditures in 1944, at the height of the war, over 1943. This would be difficult to explain except that it may represent for the Russian war economy the same experience of stability and "normalization" that is apparent in so many economic indices in the United States and Great Britain over the same period. It is not possible to explain the identity of the estimated defense expenditures of 1945 with those made in 1944. Mr. Zverev himself does not offer any explanation except that, two weeks before V-E Day, he called for a further intensification of the war effort. Since his budget was revealed while the Pacific War was on, he may have been directing a warning to Japan. The identity may also have been chosen to represent the highly provisional character of any such estimate. The *Economist* (London) suggests a deliberate overestimate so as to build a reserve to be used for reconstruction.[4] Whatever the proper explanation, however, the sudden Pacific victory will undoubtedly make part of the funds earmarked for defense available for other purposes.

The budgetary grants to the national economy offer a rough index of outlays for the capital expansion of Soviet industry and other branches of the national economy. In recent years more than half of these grants have been devoted to capital construction, the remaining portion being allocated to the expansion of working capital and for other purposes. A smaller amount of capital construction, as explained above, is also financed from unbudgeted sources. Mr. Zverev's speech before the Supreme Soviet gave the total budgeted and unbudgeted figures for capital construction in 1944 and expected in 1945. For the earlier year capital expenditures were 29 billion rubles, of which 23 billion came from the budget. For 1945 a capital expansion of 40.1 billion rubles is projected, 31.2 billion to be covered by state budget allocation. According to Mr. Zverev, almost half of the 40.1 billion

[4] The *Economist* (London) May 5, 1945, p. 587.

total will be used for reconstruction, an impressive sum indicating that Russia will soon be back on its path of sensational capital growth.

As to the budgeted figures themselves, the low volume of national economy expenditures of 31.1 billion rubles in 1943, as compared to previous years, is an especially notable fact. The wartime halt in aggregate capital expansion and, for that matter, the depreciation that has undoubtedly taken place in the plant and equipment of at least the civilian goods industries must be partly responsible. There may also have begun in that year a slowing down in the rate of expansion of the productive facilities of war industries, parallel to what showed up so conspicuously in the United States and United Kingdom war economies; however, owing to the short time available to meet the German onslaught of July, 1941, expansion in military-use productive facilities took place to a smaller degree in the Soviet Union than might be expected as the Russians have been reported to have made a phenomenally large use of salvage equipment and machines. The inability to undertake any reconstruction work in 1943, such as began in earnest in 1944, also accounts for the low national economy expenditure totals in that year.

It is certain that Russian industrial capital has suffered a deep wound from battle damage and disrepair. Though less spectacular than damage, the extent of depreciation has probably been very great, and great sections of plant and equipment will have to be placed—this time irretrievably—on the junk heap. At the same time, Russia will emerge from the war with some new and up-to-date machinery as well as a greater amount of accumulated technical skill. An improvement in productivity from more efficient equipment and from its more economical use, through assembly line techniques and so on, has undoubtedly been forced by the very keen shortage of fuel, raw materials, and labor and despite the necessity of using "diluted" labor supply (women, old folks, young people). It is obvious as an early post-war factor, however, that alongside the increase in the skills of labor never before employed industrially there has occurred a definite depletion of "human capital" in the form of widespread war weariness as well as of physical capital. An increase in Russian industrial labor supply—and in the quality of its skills—will, therefore, be an essential condition for future capital formation, as it was throughout the twenties and thirties.

Details given in Mr. Zverev's speech with respect to the social and cultural expenditures contemplated for 1945 indicate early attempts to replenish this "human capital." The record figure of 66.1 billion rubles is impressive enough, but Mr. Zverev elaborates by pointing out that the government is planning for a higher educational school enrollment of 28 per cent more than in 1944, raising the total almost to the

pre-war level; a technical school enrollment of 30.3 per cent more than in 1944; an 11.1 per cent increase in primary and secondary school attendance; and an expenditure of training for labor reserves of 25 per cent more than the year before. Other than education, the other parts of this expenditure, in the order of importance, are state social insurance, health and physical culture, pensions, and aid to mothers, all increased over 1944.

The increase in the administrative expenses of the government in 1945 is due mainly to the liberation of western areas, Mr. Zverev reports. He notes that the government establishment gave up some of its labor force to war industries during the war, but calls for additional economies. The increase in "other" expenditures, so far as the cost of debt service is concerned, will be discussed below.

III

The Soviet budget is always formally balanced. One aspect of this is that, since the budget includes a substantial part of both national expenditure and income, the expenditure level is largely determined by the size of the defense and national economy totals, and once this level is given, Soviet authorities have merely to adjust tax rates to obtain the required revenue. The tradition of a strong government at the center permits the Russian authorities to resort to heavy taxation rather than to public borrowing. There is, however, a certain degree of borrowing from the public, and the inclusion of loan receipts with tax revenues in the budget indicates the purely formal character of budget balancing.

The main source of state revenue in the Soviet economy is the turnover tax. No less than 63.1 per cent of the budgetary receipts of 1938 came from this source alone. Containing more than 2,500 rates, the turnover tax is imposed on almost all consumption articles as a markup on the cost of production and on the fixed rate of profits. Articles of first necessity are by no means excluded from this tax, as is sometimes claimed, but are included along with almost the entire range of consumer products, often at higher rates than less essential goods.[5] The tax often amounts to more than cost of production. The tax on wheat and rye, for instance, stood at about 75 per cent of the price in 1941, and sugar at no less than 85 per cent. The tax is the main financial instrument by which the Russian state curtails consumption in order to promote capital construction and national defense. Offering no possibility of evasion by the taxpayer-consumer, it is also an efficient

[5] The rates on food products accounted for 73 per cent of total turnover tax receipts in 1940, according to A. Yugow. See his *Russia's Economic Front for War and Peace* (New York and London, 1942) p. 132.

weapon for the forced mobilization of the community's savings in the interest of rapid industrialization and urbanization.

Tables III and IV show how the sharply curtailed wartime consumption affected the volume of turnover tax receipts. The fact that receipts were as high as 105.9 billion rubles in 1942 is somewhat surprising unless it is known that the tax was drastically increased in that year, for some commodities by more than 100 per cent. The sharp decline in such receipts in 1943 and 1944 is especially noteworthy and permits an approximation to the extent of the drop in civilian consumption

TABLE III—U.S.S.R. STATE BUDGET, REVENUES, 1938, 1940–45[a]
(in billions of rubles)

	1938	1940	1941	1942	1943	1944	1945
Turnover tax[b]	80.4	105.8	124.5	105.9	17.1	80.2	137.8
Profit Tax	10.6	21.3	31.3	n.a.	n.a.	n.a.	n.a.
Personal taxes[c]	5.0	9.4	12.5	n.a.	28.6	37.2	45.3
Other revenues[d]	26.4	32.3	35.3	n.a.	n.a.	n.a.	n.a.
Public loans	5.1	11.4	13.2	n.a.	20.8	34.2	25.0
Total[e]	127.5	180.2	216.8	n.a.	210.0	268.0	305.3

[a] Same as Table I.
[b] Including estimated deductions from profits in 1945, but not in 1943 when they amounted to 19.9 billion rubles and in 1944 to 35.9 billion.
[c] Mainly direct but also indirect taxes on the population.
[d] Mainly includes insurance taxes and premia and the income of machine tractor stations.
[e] Same as footnote d of Table I.

during the war. It is possible to accept such receipts as a rough index of consumption, especially in cities; and if the receipts for 1943 are reduced, say, 40 per cent to account for the tax rate increases of the year before, it is seen that consumption in 1943, when Russia had two-thirds of its normal population, was 42.7 billion rubles on a 1938 tax base, or about 47 per cent of the consumption volume of the pre-war year.[6] This compares with a decline in the volume of consumption in Great Britain of some 20 per cent and an American rise of about 10 to 15 per cent.

The relatively high estimate of turnover tax receipts for 1945, apart from the incorporation of withheld profits, reflects the increase in consumer goods output expected during the year, according to Mr. Zverev. There is no information as to whether the wartime tax rates have been eliminated, though the high estimate would indicate their retention during 1945. An Associated Press dispatch from Moscow early in May, 1945, also reports that many Russian industries were swinging back-

[6] Assuming the increase in turnover taxes as amounting to more than 40 per cent of total receipts, the *Economist* (London) February 5, 1944, p. 179, comes to the conclusion of a two-thirds drop in 1943 from 1940.

into partial reconversion early last year. Needless to say, the level of consumption in 1945, even on favorable assumptions, will still be extremely low compared to pre-war levels.

Table IV reveals a decline of more than 50 per cent from 1938 to 1944 in the share of state revenue accounted for by the turnover tax. Part of the decline has been offset by increased revenues from the profits tax, though it is not known exactly to what extent for more recent years. It should be understood, however, that the profits tax is more different in name than in economic effect from the turnover levy, and, in fact, from 1943 on a special war profits tax was included in the turnover tax receipts. The profits tax takes a fixed share of the profits

TABLE IV—U.S.S.R. STATE BUDGET REVENUES, 1938, 1940–45[a]
(percentage)

	1938	1940	1941	1942	1943	1944	1945
Turnover tax	63.1	58.7	57.4	n.a.	33.9	29.9	45.1
Profit tax	8.3	11.8	14.4	n.a.	n.a.	n.a.	n.a.
Personal taxes	3.9	5.2	5.8	n.a.	13.6	13.9	14.8
Other revenues	20.7	17.9	16.3	n.a.	n.a.	n.a.	n.a.
Public loans	4.0	6.3	6.1	n.a.	9.9	12.8	8.2
Total	100	100	100	n.a.	100	100	100

[a] Same as Table I.

of the state enterprise. As prices and output volumes are fixed by the state, the profit tax also operates as a markup on the price of goods paid by the ultimate consumer. The profit levy therefore simply adds to the flow of funds from the public into the national treasury, there to be used for state purposes. The wartime flow of profit funds to the treasury also includes profits gained by cost economies achieved by state enterprises and funds made free by the failure to make good the normal depreciation of Soviet industries.

Personal taxes mainly include two direct levies, the income tax and the agricultural tax, as well as various miscellaneous imposts. The Soviet income tax not only varies in a progressive way over the income scale but also according to the category in which the taxpayer is placed, workers, artists, and so on. There is also a bias in favor of income derived from socialized, as against individual, enterprises.[7] The agricultural tax is paid as a percentage of gross profits by the collective

[7] For details of this and other taxes, see A. Yugow, *op. cit.*, pp. 123-48; Paul Haensel, *The Public Finance of the Union of Soviet Socialist Republics* (1938); Paul Haensel, "Recent Changes in the Soviet Tax System," *Taxes*, Vol. 19, No. 11, (Nov., 1941) pp. 677-82; and The Tax Research Foundation, *Tax Systems of the World*, 7th ed., (Chicago, 1938) p. 341-42.

farm, its members, and individual peasants. Both of these taxes were sharply increased in July, 1941, by as much as 100 per cent for most income classes. The sharply progressive inheritance tax and special excise levies (in addition to the turnover tax) have also contributed to raising wartime personal tax receipts to record levels and to record proportions of total budgeted revenue. Two new war taxes, one on bachelors and childless couples (graded according to salary), and one on men exempt from military service, have also added substantial sums to these totals.[8]

The increased importance of progressive direct taxation in Soviet finance is not without political and economic significance. As long as the Soviet Union was an income-equalitarian society, or was reasonably close to it, the turnover and profits taxes (assuming more or less uniform consumption habits among the population) were a fair way of distributing the burden of industrialization and national defense upon the community. But with the growth of income inequality, an exclusive or even a heavy use of these levies has a distinctly regressive effect in requiring "the poor man" to give up a larger portion of his income for state purposes than "the rich man."

The greater use of progressive taxes can be a way of preventing this result, but so far, except perhaps during the war, little has been done along these lines. The wartime developments have probably not been sufficient to counteract simultaneously operating inequalitarian tendencies of great force. The almost universal piecework basis of the wage system and of the income of collective farmers (based as it is on "working days") must continually make for the growth of income inequality, especially during the war as large numbers of unskilled workers, including women, take their place in factories alongside experienced labor. The vast growth of the Army, including about one-tenth of the population, but also affecting the income status of their families, must also increase inequalitarian tendencies.[9] Earnings of selected technicians have been reported as much as twenty times as high as the basic earnings of many workers, and special grants, prizes, and the widespread use of bonuses have generally made things more unequal. The progressive workings of the incidence of Soviet taxation will have to be much more developed than it is to offset this wartime increase of income inequality, especially in a society presumably directed as an ultimate goal to "socialist equality."

"Other revenues" shown in Table III largely include premia received

[8] See New York *Times*, November 27, 1941, p. 9. It should not be thought that I have given a complete account of the new taxes introduced during the war.

[9] W. H. Hutt, "Two Studies in the Statistics of Russia," *South Afr. Jour. Econ.*, Vol. 13, No. 1 (Mar., 1945), p. 41; and *Economist* (London) July 3, 1943, p. 17.

will not decline. Disparities of this sort are avoidable when savings are balanced against monetary and nonmonetary vehicles of saving.

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The Doctrine of Economic Maturity

Dr. George Terborgh has written an important book.[1] It has been declared a "must" for business men's reading by the National Association of Manufacturers; it has been summarized in *Fortune* magazine; it has been enthusiastically reviewed in the New York *Times* and elsewhere. It is hailed in some quarters as an effective debunking of all that is lumped together as "New Deal economics." Certainly, its general conclusion, that policy should be directed toward increasing investment *and* savings, rather than to raising the standard of living in more forthright fashion by increasing the share of income spent on consumers' goods, private and public, is the antithesis of "New Deal economics," and indeed of almost all economics that has been written in the last ten years. The implications of this reversion to pre-World-War-I economics are of serious import; for a policy of maintaining full employment by "such a stimulus to private investment that . . . will immediately put all savings to work in providing capital" would redistribute income from the poor to the rich—just the reverse of the policies of the "stagnationist," as Terborgh calls the economists he lumps together for attack. Consequently, although the book is aimed at the general public and employs a style of presentation that is scarcely academic, it requires the careful consideration of academic economists, and of all others interested in economic policy.

I. *A Bogus Bogey*

It seems necessary to begin by summarizing briefly Professor Hansen's thesis; for the object of some of Terborgh's attacks is a mere straw man —a "bogus" bogey. According to Professor Hansen, in addition to the Juglar and Kondratieff cycles that bring periodic depression,[2] there are in highly developed economies additional factors tending to create an excess of savings over investment at high levels of employment, and consequently to keep the average level around which fluctuations take place well below —and perhaps farther and farther below—full employment. On the investment side, these factors are the declining rate of population growth, the disappearance of the frontier, and the tendency for inventions to become capital-saving rather than capital-absorbing; and on the saving side, the achievement of unprecedentedly high levels of income when full employment is reached, and the growing importance of corporate and institutionalized saving.

From this statement of the thesis, it follows at once that all arguments

[1] George Terborgh, *The Bogey of Economic Maturity* (Chicago: Machinery and Allied Products Institute. Distributed by Anderson House, Washington, D.C. 1945. Pp. xviii, 263. $3.00).

[2] A. H. Hansen, *Fiscal Policy and Business Cycles* (New York, Norton, 1942) chap. 1.

designed to show that the trends contributing to secular stagnation do not explain the 1929-33 downswing are completely irrelevant. Hansen never pretended that they did. Recognition of this simple fact immediately disposes of Terborgh's Chapter XI. It also disposes of much of the argument of other chapters; for much of the argument amounts merely to saying that the trends enumerated had been with us for a long time before 1929, and hence do not explain the appearance of the "Great Depression" in the 1930's rather than earlier. The doctrine of economic maturity was never presented as an explanation of the collapse of investment after 1929; on the contrary, its implication is that deep and prolonged depression has been imminent for decades. Various things, such as gold discoveries, wars, and the appearance of "great new industries," came along to prevent its presence from becoming obvious before the 1920's in Britain or the 1930's in the United States. Even so, during the entire century before 1929 there were long periods when full employment was not reached even at the top of cyclical upswings; indeed, only the conjuncture of Kondratieff and Juglar upswings contrived to produce full employment in peacetime.

The application of the "stagnation thesis" to the great depression of the 1930's does not even rest upon a long-run tendency for investment to fall. The argument is rather that only very strong cyclical factors to *raise* the level of investment can, in the face of the high and rising level of savings that accompanies high and rising national income, combined with a declining rate of population growth and disappearing frontiers, bring about full employment. In the 1930's, no such strong cyclical factors appeared, and the forces of stagnation, which had been present for decades, at last showed themselves in an obvious manner.

Efforts to disprove the "stagnation thesis" by showing that the American economy still has room for expansion are equally futile. Hansen has never denied this fact. The argument is not that gross national product at full employment can increase no further; it is only that full employment is increasingly difficult to attain and maintain as a country becomes more industrialized, more fully populated, more fully developed, and richer. There is, perhaps, also an implication that the gross national product at full employment is unlikely to maintain its maximum historical rate of secular increase, once an economy starts to become more reliant on technological progress alone for further improvement in its standard of living;[3] but even this argument—plausible though it is—is not really essential to the stagnation thesis.[4]

[3] *Cf.* Hansen's article, "Economic Progress and Declining Population Growth," *Am. Econ. Rev.*, Vol. XXIX, No. 1 (March, 1939).

[4] All these ideas are quite clearly stated in Hansen's writings, especially in the first two chapters of *Fiscal Policy and Business Cycles* and his essay on "Economic Implications of a Declining Rate of Population Growth." Since Terborgh does me the honor of including me among the economists he lumps together for attack, I may be forgiven two quotations from my own publications: "Had not war broken out in August of 1914, it is quite possible that the United States would have suffered a prolonged depression during the decade that followed, instead of in the 'thirties" (*The War and Postwar Cycle in Canada, 1914-1923.* Advisory Committee on Reconstruction, Ottawa, 1943, p. 5). "The secular trends were already present in the 'twenties, but they were offset and hidden by increased consumption

Still less valid is the suggestion that the stagnation thesis means that there is no room for a further rise in the standard of living. Indeed, one of the most curious of Terborgh's accusations is that Hansen and his "followers" claim that "there is too much housing in relation to the number of families" (p. 180). All the writers classified by Terborgh as "stagnationists" have stressed the need for special measures to raise the standard of living in general and the standard of housing in particular.[5] Nathan says in so many words, "It was not that we didn't need more houses and more of the goods and services we could produce during the 20's, but those consumers who needed these products didn't have sufficient buying power to consume them all."[6]

The "Stagnationist" Conspiracy

Not only does Terborgh misrepresent the arguments of the economists he attacks but he lumps them together as a "school" of "stagnationists" and "professional pessimists" in a quite unwarranted manner. Indeed, in his discussion of the T.N.E.C. hearings, he virtually accuses them of conspiring to defraud the public. Altman, Chase, Hansen, Henderson, McLaughlin, Nathan, Sweezy—what binds these men together and sets them apart from other economists? So far as the present writer can see, their sole common denominator is an interest in employment policy and a belief that in industrially advanced countries government action is likely to be necessary to maintain full employment.[7] But the group of economists with these characteristics also includes Haberler, Harris, Harrod, Kaldor, Kalecki, Keynes, Lange, Lerner, Marschak, Samuelson, Smithies, and hosts of others. For the sake of discussion, however, I shall confine my exposition of the stagnation thesis to publications of the economists labelled "stagnationist" by Terborgh.

"Stagnationist" Policy Proposals

Terborgh also misunderstands or misrepresents the position of the "stagnationists" with regard to policy. According to Terborgh, they regard deficit-financed public spending as a panacea. Nothing could be further from the truth. Hansen has recommended tax revision, low interest through new credit institutions, private work reserves, assistance for industrial research, and foreign loans to stimulate foreign trade.[8] Nathan says that "To ascribe

demand, partly for new commodities like automobiles, partly for replacement like housing and utilities. In the 'thirties, no such demand appeared, but it may develop at any time" (My essay with Dr. R. A. Musgrave, "Deficit-Finance, the Case Examined," *Public Policy* II [Cambridge, 1941], p. 152).

[5] See, for example, Hansen and Greer, *Urban Redevelopment and Housing,* Planning Pamphlet No. 10 (Washington, Nat. Planning Assoc.).

[6] Robert Nathan, *Mobilizing for Abundance* (New York, 1944), p. 70.

[7] Since I am—according to Terborgh—the most pessimistic of these "professional pessimists," I might add that I have never met three of my fellow "conspirators," have exchanged only a few words with four of the others, and know only one of them at all well.

[8] See, for example, his pamphlet "After the War—Full Employment," (Nat. Resources Planning Board, 1943); his chapter in *Postwar Economic Problems* (ed. Harris, New York, 1943), and his book, *America's Rôle in the World Economy,* (New York, 1944).

economic depressions to a single, simple cause and to suggest an equally simple and single method of eliminating them would be foolhardy."[9] He contends that "every consideration should be given to stimulating expenditures for capital goods after the war. Policies should point toward minimum restrictions, maximum incentives, and increased competition, so that private investment in plant and equipment will be encouraged. There can be vast outlets abroad for America's productive capacity."[10] Far from presenting public spending as a panacea, he considers it "a last resort." In my own essay with Dr. Musgrave, the conclusion emphasizes the importance of giving proper weight to policies other than deficit-financed public spending. Redistribution of income to raise the level of consumption, stimulation of investment by low interest rates, government sharing of the risk of new enterprise, and " a revision of tax policy in the direction of rewarding rather than penalising risky investments" are among the complementary devices suggested.

Terborgh is particularly bitter about a supposed lack of attention on the part of the "stagnationists" to deterrents to private investment in new or risky enterprises, and especially an alleged failure to appreciate the need for tax reform to increase the flow of "venture capital." He argues that "it seems not to have occurred to the stagnationists that over-saving of loan capital may be the result of the under-saving of venture capital and that its cure may lie in increasing rather than decreasing the supply of funds looking for risk and profit" (p. 218). A few citations will show that the stagnationists have in fact been well aware of this problem. First, Professor Hansen: "While a recovery may be induced in particular by net income-created governmental expenditures, public policy must, in a system of private enterprise, be directed mainly to providing the necessary conditions by which private enterprise can go forward. . . . In this connection it is important to consider the tax structure with a view to the elimination or modification of taxes tending to prevent the normal flow of private investment."[11] Next, Dr. Nathan: "Income taxes should never be increased to a point where so small a portion of income is left to the individual that further investment of funds with any risk whatsoever is foolhardy. Special tax incentives might be granted to industries whose rapid development is in the interest of the national security or well-being."[12] Finally, two statements of my own: "(With a reduction in income taxes) there will be a shift from liquid and safe investments to illiquid and risky ones and the supply of venture capital is increased. . . . We conclude, therefore, that income taxes, and especially corporate income taxes, should be reduced in the immediate post-war period."[13] And, "It is almost impossible to devise a tax system that would raise large sums without

[9] Nathan, *op. cit.*, p. 56.

[10] *Ibid.*, p. 89.

[11] Hansen, *Fiscal Policy and Business Cycles*, p. 383. See also Hansen and Perloff, *State and Local Finance in the National Economy* (New York, 1944), pp. 243, 247.

[12] Nathan, *op. cit.*, pp. 143-44. See also pp. 135-36.

[13] "Post-War Tax Policy," Part II, *Canadian Jour. Econ. and Pol. Sci.*, (November 1944).

discouraging private consumption or private investment, and thus nullifying the stimulating effects of the expenditure."[14]

Actually, the effect of the introduction into economic literature of the concept of secular unemployment has been to make public spending, and especially public investment, seem a good deal less of a panacea than it did before. So long as unemployment was regarded as a purely cyclical problem, countercyclical timing of public investment seemed a reasonably adequate means of meeting it. Given chronic unemployment as well, such a policy is clearly inadequate in itself. In so far as the doctrine of economic maturity has any policy implication arising directly from it and peculiar to it, it is that policy should be directed toward encouraging consumption at the expense of saving. It is only natural that the capital goods industry, the financial institutions, and other economic groups dependent for prosperity on a high level of investment *and* saving, should find this conclusion an uncomfortable one.[15]

II. *Cracks in the Pillars?*

Terborgh subjects each of the main "pillars" in the structure of the Hansen thesis to analytical and empirical tests, and finds them badly cracked. Indeed, his general conclusion is that "seldom has so pretentious a body of doctrine been so scantily fortified by factual evidence" (p. 214). Are the pillars really cracked, or has Terborgh been misled by the grain in the marble?

Population Growth

Terborgh discovered no evidence that countries with high rates of population growth have had a more rapid rise in *per capita* production than countries with slow population growth. The lack of such correlation in historical

[14] "Public Work and our Post-War Economy" in *Post-War Goals and Economic Reconstruction* (ed. Zurcher, New York University, 1944), p. 85. Similar remarks may be found in my address on post-war taxation to the Canadian Manufacturers' Association (*Industrial Canada,* July, 1944) and in my essay with Dr. Musgrave (*op. cit.*).

[15] In this connection, a few words about the passage from my own work that Terborgh singles out for special censure may not be out of place. Terborgh states that I have "topped the bidding" in fantastic estimates of needed "public work." In the first place, as was made clear in the article he cites, I was using the term "public work" to include all government expenditures on goods and services. In the second place, the estimates apply only on the assumption that special measures to raise the level of consumption or investment are not undertaken; and I have frequently stressed the advisability of such supplementary measures. Third, the estimates were based on the arbitrary assumption that the price level would rise fast enough in the first years after the war to offset net reductions in productivity due to withdrawals from the labor supply and shortening of hours. Fourth, while my estimates were extremely crude, for illustrative purposes only, and made at a time when few other estimates had been published, the range of 25 to 50 billion dolllars as the volume of expenditures that will be needed to maintain full employment would seem to be of the right order of magnitude in the light of more careful estimates subsequently published, particularly those of Smithies and Mosak in *Econometrica* for January, 1945, and of Kalecki in the *International Labour Review* of November, 1945. Fifth, such estimates of the post-war "deflationary gap" do not in themselves imply acceptance of all or any of the arguments of the stagnation thesis as outlined by Dr. Terborgh. *Cf.* D. McC. Wright, "The Great Guessing Game: Terborgh *vs.* Hansen," *Rev. Econ. Stat.,* Vol. XXVIII, No. 1 (Feb., 1946).

cases proves nothing with regard to the lack or presence of causal relationships, as any statistician knows. However, Terborgh does not actually deny that the rate of population growth is declining, nor that this factor would in itself tend to reduce investment. He only argues that population growth was declining in the United States for 70 years before 1929, and that *per capita* production increased nevertheless. This fact clearly does nothing to destroy the stagnation thesis. It only shows that in the 70 years prior to 1929, other factors were present to *offset* to a considerable extent the adverse effects of a declining rate of population growth. As Terborgh himself admits (p. 44), even if other factors could be excluded, a real test of the thesis would require a correlation of *investment* with population growth over some 200 years. But, Terborgh adds, why should we worry what happens to investment, so long as production increases? Had he asked, "Why worry about investment so long as we have full employment?" the question would have been relevant but its implication would have been very different; for during the whole period during which population growth declined, full employment was rarely achieved in the United States except during the Civil War and World War I periods.

Actually, the Kuznets (National Bureau of Economic Research) data cited by Terborgh show a very high correlation between American population growth and investment (net capital formation at 1929 prices) from 1869 to 1928, after which there was a sharp break. Gross national product and gross national product per capita were also very closely correlated with population. With respect to the timing of population trends it is worth pointing out that the percentage increase fell very little up to the first World War, and that the *amount* of population growth did not reach its peak until 1925.[16]

The Frontier

Terborgh also admits that the American frontier has disappeared, and that this fact in itself would tend to reduce investment. Again, he points out that the frontier disappeared decades before 1929, and that expansion continued nevertheless. Even though this were true (the last frontier phase *began* in 1890), it would not disprove the thesis. Terborgh also introduces some evidence to show that in any case the existence of a frontier is of minor importance in determining the level of investment. He points out that the ratio of capital formation to gross national product was higher in 1900-1930, when the frontier was gone, than in 1870-1900, when the frontier was flourishing. However, these figures could be interpreted as showing the higher "leverage" effects of investment in the earlier period. Similarly, his figures showing that both in 1850 and in 1890 the states east of the Appalachians had a higher *per capita* wealth than those west of the Appalachians demonstrates mainly the high geographical multiplier effects of opening a frontier —opening the West led to investment in the production of steel rails, agricul-

[16] *Cf.* Alvin H. Hansen, "Some Notes on Terborgh's *The Bogey of Economic Maturity*," *Rev. Econ. Stat.*, Vol. XXVIII, No. 1 (Feb., 1946), pp. 13-14; and Hans A. Adler, "Absolute or Relative Decline in Population Growth?" *Quart. Jour. Econ.*, Vol. LIX, No. 4 (Aug., 1945).

tural implements, and construction materials and equipment in the east.

Capital-Saving Inventions

With regard to "capital-saving" inventions, Terborgh is on still less firm ground. He shows "investment per dollar of output," 1869-1929; he then fits a straight-line trend, and concludes, "there is no existence of an increasing proportion of capital-saving innovations" (p. 96). Had he carried his figures through 1939, a curvilinear trend, with a distinct tendency to flatten out, would have fitted his figures from 1897 on better than a straight line. The Kuznets data show a rising ratio of output of capital goods to output of final products (excluding construction) from 1869 to the first World War and then a steep and steady decline. This point is of considerable importance; for Terborgh's whole argument regarding the effects of maturity on the rate of replacement rests on the assumption that the ratio of capital-consumption to output does not fall with maturity—that is, on the assumption that there is no tendency for capital equipment to become more durable. Otherwise the fact that a tapering off of the rate of new investment results in an increase in the average age of existing equipment does not lead, as Terborgh argues that it does, to greater "replacement opportunities."

Great New Industries

Terborgh argues that "great new industries" have no more influence on capital formation than hosts of small industries. This argument would affect the theories of Professor Schumpeter, whom Terborgh classifies in his book as an "anti-stagnationist," more than those of Professor Hansen; but in any case part of the evidence presented to support the argument is irrelevant. He points out that the share of the total investment provided by railroads and motor vehicles together shows no clear trend. "For 50 years after the 1870's their combined rate of investment rose no faster than capital formation as a whole" (p. 88). However, it is not the *relative share* of these industries in total investment that counts, but the *volume* of investment. Moreover, the fact that investment in these industries rises no faster than capital formation as a whole might well be regarded as corroboration of the Schumpeter or Hansen thesis, since it might merely indicate the very large leverage effects of investment in large new industries. In any case, what Terborgh ultimately succeeds in doing is to demonstrate the enormous importance of great new industries. The automobile industry alone, he shows, might have been responsible, directly or indirectly, for as much as 20 per cent of total investment in the 1920's; for fifty years, three industries were *directly* responsible for 13 to 20 per cent of total investment.[17]

Trends in Saving

On the savings side, Terborgh unjustly accuses the "stagnationists" of completely ignoring the effects of declining rates of population growth on

[17] *Cf.* Wright, *Rev. Econ. Stat.*, Vol. XXVIII, No. 1. Terborgh's statement that more patents were issued in the 1930's than in the 1920's is just another example of irrelevant data. Clearly, the number of patents is only very loosely related to the level of investment, and the fact that more patents were issued in the thirties than in the twenties in no way

savings.[18] He then proceeds to argue that a declining rate of population growth reduces saving because with more old people, there will be more net dis-savers. This argument is of doubtful validity; for children also consume more than their incomes—or their parents for them; and a high birth rate certainly involves more net dis-saving by young families than a low birth rate. His argument that *some* saving is undertaken for the express purpose of investing is, of course, in any case, fully recognized by the "stagnationists" and is quite irrelevant; so long as some saving is planned for which there is no offset, income and employment must fall.

Depreciation Allowances; Internal Financing

In discussing capital consumption as a source of saving, Terborgh abandons the statistical approach, and makes no effort to evaluate the volume of depreciation allowances. He simply argues that capital consumption is measured by the decline in capital value rather than by the use of services from capital assets; that depreciation allowances earned are less than allowances accrued (which might be the *result* of stagnation, incidentally); that not all firms set aside allowances anyhow, and that to some extent the allowances are used for new investment. When he comes to internal financing of corporations, he suddenly discovers that causal relations are hard to disentangle in economic history! However, he bravely embarks upon an effort to measure net inflow of capital to corporate enterprise as a whole. He finds that corporate saving was less in the 1930's than in the 1920's, but fails to point out that since this fact was due to low profits, it could be treated as *substantiation* of the stagnation thesis. He also shows that net savings of non-financial corporations was a lower share of capital requirements in 1936-41 than in 1923-29. This fact might be explicable in terms of low profits in the older industries and expansion of relatively new defense industries, and in any case certainly provides no test of the *trend* in corporate savings. Finally, his inclusion of cash balances among capital requirements is surely not justified in this context.

III. *Need for Further Study*

There is room for much new work on the relationship between secular trends and unemployment. It may well be that the theory of economic development, and especially its econometric aspects, will prove the most rewarding field of economic research during the next decade. Further study of the "stagnation thesis" would be an important part of such research. What exactly does it mean? Does it mean declining rate of increase in gross national income at full employment, an increasing gap between the actual trend of gross national product and the trend at full employment, increasing amplitude of cycles (which must mean increasing intensity of depression, since full employment is always the upper limit), failure to reach full employment at cyclical peaks, or some combination of these concepts? Which of the

disproves the argument that inventions in the thirties were not of a sort that called forth large additions to the stock of capital.

[18] See, for example, Higgins and Musgrave, *op. cit.*, pp. 146, 153.

"pillars" are true secular trends, which institutional or cyclical factors? What is the precise relationship of secular stagnation to business cycles and long waves? What is the relative importance of cyclical and secular factors in the explanation of actual unemployment? What kind of empirical evidence, if any, would constitute proof or disproof? What is the relation of the thesis to estimates of the "deflationary gap"? How is it related to Keynes's theory of under-employment equilibrium, and to the economic development theories of Schumpeter, Löwe, Lederer, Sombart, Weber, Marx, and others? Just how do its policy and political implications differ from those of earlier analyses of unemployment? Such questions are very much worth answering; but they must be examined with very great care.

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Note by Dr. Terborgh

The editor of the *Review* has invited me to prepare, on short notice, a rejoinder to be published with Mr. Higgins's communication. Unfortunately, the pressure of other tasks does not permit me to undertake what would certainly have to be a long essay, for Mr. Higgins has laid about himself right lustily, raising a score of points for comment and reply. Unintentionally no doubt, he has garbled my position in a variety of ways, which an impartial reading of *The Bogey of Economic Maturity* will disclose. Under the circumstances, I shall have to let the book speak for itself.

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Note on Corporate Expansion Since 1940

I

A recent investigation of the financial statements of 150 manufacturing corporations has yielded significant information on the subject of corporation expansion since the war.[1] It has established the fact that most of the sudden expansion lies in the current assets and that the primary source of this expansion is corporate savings. Such internal expansion has far-reaching economic implications.

The sample is comprised of corporations licensed to operate in Texas. We believe, however, that this sample is representative of a major part of the entire manufacturing industry. The companies range in size from Sterling Aluminum Products Incorporated with average assets of $1,953,000 to the United States Steel Corporation with average assets of $2,032,248,000.[2] These corporations include the following manufacturing classes: (1) automobiles and equipment, (2) building material except lumber, (3) chemicals, (4) electrical machinery, (5) foods, (6) iron and steel, (7) machinery except

[1] Funds for the investigation were made available by the University of Texas Research Council.

[2] Average assets were computed on the basis of the four years 1940-1943.

electrical, (8) nonferrous metals, (9) oil refining, (10) paper and lumber, (11) rubber, and (12) transportation equipment. The assets of iron and steel, nonferrous metals, oil refining, and rubber manufacturers comprised more than 45 per cent of the total assets of their respective manufacturing class, and the total assets of the twelve classes comprised 31 per cent of the total assets of these twelve manufacturing classes. The national scope of these corporations is evidenced by the fact that 133 (89 per cent) of the companies were listed on the New York Stock Exchange.

Spectacular growth appeared from 1940-43 among the manufacturers of transportation equipment, automobiles and equipment, electrical and non-electrical machinery, each class having expanded by more than 60 per cent. All 150 corporations together expanded from $15,382,000,000 to $19,728,000,000, a growth of $4,345,000,000, or 28 per cent.

Current assets expanded from $6,105,000,000 to $10,254,000,000, an increase of $4,149,000,000 or 68 per cent. Ninety-five per cent of the growth in total assets was accounted for by the current assets. The breakdown of current assets revealed that most of the growth lay in cash, receivables from the federal government, and government bonds. Fixed assets remained practically unchanged over the period.

Current assets are a measure of liquidity and the economic effects of corporate liquidity are widespread. For example, corporations with high liquidity are in a favorable position to reconvert to civilian production without resorting to external sources of funds. This avoids expenses and delays ordinarily encountered in the capital market, and in turn tends to lessen the frictional unemployment prevalent in corporate readjustment.

II

The source of asset-expansion is either external or internal. Promissory notes, open-book accounts, capital stock, and long-term notes[3] are the external sources, while charges against income such as provisions for federal income and excess profits taxes, contingency provisions, reconversion provisions, and surplus provisions are the internal sources, otherwise known as corporate savings. It is interesting to observe the shift from traditional external instruments to the savings devices.

Short-term instruments comprised of promissory notes and open-book accounts grew by $923,000,000 during this period; this is equivalent to 21.2 per cent of the growth in assets. However, the long-term instruments were less active. Common stock, for instance, increased by only $78,000,000 while preferred stock actually decreased by $149,000,000. Long-term notes increased by $200,000,000. Taken together, the three long-term instruments showed a net increase of only $129,000,000, just 3 per cent of the growth in assets. Obviously, manufacturing corporations have not expanded through the issue of long-term instruments.

Provisions for federal income and excess-profits taxes were $1,117,000,000 greater on December 31, 1943, than on December 31, 1940. Contingency

[3] Bonds and other evidences of debt with maturities exceeding one year.

provisions increased by $161,000,000 and reconversion provisions by $293,000,000. Earned surplus increased by $1,071,000,000. The growth in short-term savings, provisions for federal income and excess profits taxes, were equivalent to 25.7 per cent of the expansion in assets and the growth in long-term savings, including contingency, reconversion and surplus provisions, were equivalent to 35 per cent of the asset-expansion. Long- and short-term savings combined comprised 60.7 per cent of the asset-expansion, and external and internal sources together accounted for 84.9 per cent of the asset-expansion. The balance of the asset-expansion was widely disseminated among less significant accounts such as property and sales tax accruals, wage and commission accruals, dividends declared but not paid, miscellaneous reserves, capital surplus, deferred credits, etc.

This shift in the source of corporate expansion since the war has thickened the underlying security of long-term debts, which has helped to drive bond prices up and cause a veritable epidemic of refunding at lower interest rates. Preferred stock is affected in much the same way as bonds. Increased corporate savings, along with a contraction in the supply of preferred stock, has caused the remaining securities to bring a premium in the market, which in turn has motivated extensive redemption of such securities at lower dividend rates. Common stock, however, is affected differently from preferred because it is the residual claimant to excess assets. Much of the asset accumulation is spilling over into earned surplus with the effect that book values are increased, market values are thereby stimulated, and common stockholders continue to benefit without interruption.

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Comments on the Economists' Opinion Survey

On the basis of some experience in public opinion surveys, I should like to comment on the article by Professor James Washington Bell on "The Function of Government in Postwar American Economy,"[1] which reports on a survey of opinion among a group of economists. First I should like to comment upon the execution of the study and the interpretation of the results, and then upon the question of the adequacy of the methodological approach of Professor Bell and the committee for whom he speaks to the problem which confronted them.

The sampling methods used by Professor Bell and his committee are such as to make it necessary to be extremely cautious in interpreting the results obtained. No attempt was made to reach a cross section of the membership of the American Economic Association, or of the portion of the membership holding the Ph.D. degree. Instead, the questionnaire was sent to specialists in the field of public control who held the Ph.D. degree or "had made substantial contributions in the field," and to "past officers of the Association, nominating committees, and editorial boards since 1935."

One of the findings suggested by the survey was that the first group,

[1] *Am. Econ. Rev.*, Vol. XXXV, No. 2 (May, 1945), pp. 422-47.

specialists in the field of public control, show unusually strong support for government operation of a variety of projects. As for the second group, economists who have reached the degree of eminence represented by responsible positions within the American Economic Association may be expected to be, on the average, older men. Other work has indicated that there is among economists a negative correlation between age and acceptance of Keynesian economics; it seems reasonable to suspect that age is correlated with a variety of economic opinions. In other words, the sample cannot be taken as representative of all economists. It is composed of representatives of two distinct groups each of which differs to an unknown extent from other economists.

Additional difficulties are attendant upon a response from only slightly less than half of the sample (60 of the 125 questionnaires mailed were returned and tabulated). The replies received may or may not be fully representative. At best, results obtained from a sample of 60 interviews must be handled cautiously. In this instance, only if a very large majority of the sample vote the same way on a given proposal is it possible to predict with any confidence that a majority of all economists would vote the same way under the same circumstances.

The results of many of the individual questions must be interpreted with additional reservations because they suffer from such weaknesses as the following:

1. *Loading.* Several of the questions are so loaded that the replies should be thrown out altogether. Question 32, for example, inquires whether or not the respondent is in favor of having the government "Prevent labor abuses"! Who is not anxious to have "abuses" corrected? Students of public opinion have discovered that the framing of questions in such a way as not to bias the replies is a delicate business. By asking a question in one way instead of another it may even be possible to obtain diametrically opposite results. Little confidence can be placed in replies to questions containing such heavily loaded words as "abuses."

2. *Unsatisfactory arrangement of questions.* The relation between different parts of the same question is not always clear. For example, in answer to Question 8, only 21 economists voted in favor of having the government "Limit size of large incomes," but 51 voted in favor of limiting the size of large incomes "by progressive taxation." The difficulty seems to be a confusion between measures and the reasons for the measures—between the desirability of progressive taxation and the use of progressive taxation as a means to limit incomes. The economists might better have been asked if they accepted the limitation of incomes as an objective for the government, and only those who voted "Yes" should have been asked about the means to attain it.

3. *Too many respondents not voting.* There are a number of questions to which a large proportion of the respondents did not reply. On Question 26, for example, the vote was 24 to 21 with 15 not voting. It is not safe to assume that the 15 would have voted in the same proportions as the others if they had been questioned further. The interpretation of the results must await an explanation of why so many did not vote. Was it because they did

not feel informed about the question, or because they objected to its phrasing, or did some other factor restrain them?

4. *Broad generalities.* A few of the questions are generalities so broadly stated as to miss any real differences of opinion which may exist. Question 14 asks whether the government should "Prevent operation of private monopolies and conspiracies in restraint of trade (except for ones specifically exempted by legislation)." The interesting aspect of the results is that two economists actually voted "No." The question misses the real differences among economists as to what can and should be accomplished by the antitrust laws.

One final point about the execution of the study: the column headed "Comments" is very nearly useless for the reason that it does not distinguish among different types of comments. One comment may be a reservation, another an objection to the phrasing of the question, a third a fuller discussion of the problem involved, yet all are added together to give a single meaningless total.

The method adopted by the committee to measure quantitatively the extent of agreement among the economists can serve only as a very rough measure. The committee defined a certain ratio of "Yes" to "No" answers as indicating substantial agreement and found agreement thus defined on 62 per cent of the questions asked. The difficulty with this procedure, of course, is that the per cent of agreement depends on what areas are covered and how the questions are phrased. The committee, if it had chosen, might have asked only controversial questions, or only noncontroversial questions. It seems that it asked 62 per cent noncontroversial questions.

The committee started its work with the hypothesis that an economist is, within his field, a rational being little influenced by "emotion," and that, therefore, it is probable that a consensus among economists exists, which consensus the committee set out to discover. Setting aside the question of how rational the economist is within his field, we are dealing here with an area which is not only economic but also political. The study of the formation of political opinions has shown that nonrational factors are of very great importance. It is incautious to assume that the opinions of economists in this area are wholly rational. The committee would be on safer methodological ground if it set out to discover the extent to which the views of economists on questions of public policy can reasonably be attributed to scientific knowledge before it advocates the acceptance of those views by the government.

If the committee intends to proceed further with its investigation, there are several areas which I should like to suggest for exploration. In the first place, the factors which tend to divide economists might be investigated. It would be a fairly simple matter to obtain factual data on a few such variables as age, sex, income level, fields of interest, and type of employment from the respondents to any future questionnaire, and then to prepare simple correlations to discover the extent to which these factors are related to politico-economic opinions.

By going one step farther, a few simple questions could be asked designed to get at the basic political attitudes of the respondents. For example, a question could be asked as to whether the economist preferred Roosevelt or

Dewey in the last campaign. No doubt economists would be found of many shades of political opinion. It might be found, however, that on certain questions of public policy economists of all shades of opinion tend to agree.

To investigate the area fully it would be necessary to obtain data comparing the opinions of economists with those of other segments of the population, since it is not very meaningful if economists agree when everybody else is also in agreement. The most satisfactory procedure would be to ask the same questions both of a sample of economists and of a cross section of the population. The expense of such an undertaking would probably be prohibitive, but it should not be difficult to make arrangements to ask economists some of the thousands of questions on which the country has already been polled. The answers of the economists and the general public could then be compared; any differences should prove interesting in themselves. To segregate the views peculiar to economists as economists, however, it would be necessary to investigate the extent to which the economists' opinions are different from those of other persons with the same age, sex, income, social position, etc. A final step would be to investigate the reasons why economists have come to hold the views which they entertain. Armed with data in this area it would be possible to point out political questions concerning which economists, as a result of their special training, have reached conclusions different from those of the general public.

If the views expressed in this communication have been critical of some of the methods used by the committee, let me make amends by emphasizing that the results obtained are extremely interesting and can provide a very useful foundation for further investigation. The fact that the committee was willing to experiment with a technique new to economists in an attempt to be of service to the community is a sign of a sense of social responsibility which can be regarded only with respect.

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The Incidence of the Corporation Income Tax: A Reply

In a recent article by Mr. Richard Goode[1] the conclusion is reached that the federal corporate income tax probably exerts a negligible effect upon the price level. On the basis of this conclusion, it is suggested that the tax is not shifted. With certain reservations, it may be agreed that the corporate income tax does not produce higher prices. It does not necessarily follow from this, however, that the tax is not shifted.

The federal corporate tax, in its present form, imposes a substantial levy on all corporate income, but provides only partial recognition of losses—either of operating losses or of capital losses. Thus, the effect of the tax is to increase the risk of all investments where the offsetting of losses is uncertain. As a result, the flow of investment tends to be impeded and the supply of capi-

[1] "The Corporate Income Tax and the Price Level," *Am. Econ. Rev.*, Vol. XXXV, No. 1 (Mar., 1945), pp. 40-58.

tal to be reduced. This reduction in supply of capital tends to raise the marginal productivity of capital and to lower the marginal productivity of labor and land. In this sense, some part of the tax tends to be shifted, in the long run, to workers and landowners. This shifting, moreover, is not dependent on any change in the *general* level of prices.[2]

As Mr. Goode suggests (p. 50), this conclusion is subject to qualification. The tax, through its effects on both investment and saving, may influence the level of national income. The level of national income, in turn, may affect the return to the factors. Thus, the ultimate effects of the tax may differ from its immediate effects. Any conclusion as to whether the tax, on balance, influences income in the direction of expansion or contraction depends upon the character of the fiscal policy which it is assumed would be adopted in the absence of the tax.

The income effects of the tax, however, do not necessarily alter the conclusions regarding its effect on the return to capital. Because of the fact that the tax results in a relative scarcity of capital, the rate of return to capital would be higher, at any level of income, than would otherwise be expected *at that level of income.* In this formal sense, the tax would be shifted regardless of its effect on national income.

It is true that if the tax were expansionary, the increase in return to capital resulting from the increased income would offset, wholly or in part, the direct effect of the tax on the return to capital. On the other hand, if the tax were deflationary, as seems more likely, the income effect would accentuate the direct effect of the tax on the return to capital. Or, if the deflationary effects of the tax were offset by other elements of fiscal policy designed to stabilize the economy, the tax could be said to have no net influence on national income. In that case, its influence on the return to capital would be confined to its direct effects, and at least some degree of shifting would result.

Mr. Goode touches on this argument when he states (p. 50) that the corporate tax would "limit the capital available to corporations." But he passes over the point with the conclusion that a restriction in supply of capital would not necessarily produce an increase in the general price level. He ignores any possible relation between a reduction in supply of capital and the shifting of the tax *via* changes in the marginal productivity of capital.

HOWARD R. BOWEN*

[2] Professor Boulding suggests, also, that a profit tax may reduce the supply of enterprise. *Am. Econ. Rev.*, Vol. XXXIV, No. 3 (Sept., 1944), pp. 567-72.

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The Incidence of the Corporation Income Tax: A Rejoinder

Mr. Bowen's note raises again the question as to what "shifting" a tax means. Admittedly, the concept of shifting and incidence is ambiguous. Reasonable clarity requires that all who speak of shifting specify *what* is shifted *where* or *to whom* and *by what process*. It might be still better to discard the terminology entirely. In the article to which Mr. Bowen refers I centered attention on the possibility of shifting through higher commodity

prices, because this seems to be the process referred to in most recent discussions of shifting of the corporation income tax. Mr. Bowen appears to accept the conclusion that the corporate tax is unlikely to result in a higher general level of commodity prices, but he believes that shifting may nevertheless take place through changes in the rate of return on capital.

Mr. Bowen suggests that the corporate income tax may so increase reluctance to invest that the amount invested will decrease and consequently the marginal productivity of capital and rates of return on capital (before tax) will be increased *at any given level of national income.* Granting for the sake of discussion the premise that the tax will significantly impair willingness to invest, the Bowen conclusion does not seem necessarily to follow.

If the propensity to consume did not change and the government did not intervene, income would fall to the level consistent with the amount of investment forthcoming in the light of the new attitude of investors. I should suppose that under those conditions the rates of profits and interest and the relative share of capitalists in national income would be those consistent with that new amount of investment and that new level of income, whatever the explanation of their existence.

If, on the other hand, the propensity to consume rose or offsets to saving other than private investment increased because of government action, national income might be maintained in the face of decreased private investment. Under these conditions, it might well be that in the long run the rate of profits would be higher than it would be with the same income and more private investment. It is not clear, however, that the total amount of profits and interest and their relative share in national income would be enlarged. It would be an open question, moreover, whether to attribute the change in rate of profits to the corporate tax or to the change in the propensity to consume or to the government program.

The development described might be called "tax shifting," although the concept certainly would be more subtle than that ordinarily used. Probably all will agree that the effects of the corporate income tax and alternative sources of revenue on national income are more important than "shifting" in any formal sense, however defined.

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The Economics of the Pacific Coast Petroleum Industry: Reply to J. A. Loftus

In the September, 1945, issue of this *Review* Mr. John A. Loftus, describing my analysis of the Pacific Coast petroleum industry, makes certain comments which should be corrected.[1]

(1) He suggests that not enough significance was attributed to concentrated control of oil transport facilities on the West Coast. He overlooks my

[1] Review of *The Economics of the Pacific Coast Petroleum Industry, Part 1: Market Structure, Am. Econ. Rev.,* Vol. XXXV, No. 4, pp. 727-30.

explanation that in California the geography of production and refining is such that concentrated control of transport is less important to pricing than elsewhere.

(2) He characterizes my remark that the costs of oil production are not very closely related to price as indefensible, but entirely neglects the context which defended this remark. The thesis he criticizes can be defended at length statistically and theoretically.

(3) He suggests that too much attention was devoted to differential qualities and gravities of crude, because they are "trivia." These differentials are not trivial in intepreting California crude prices, costs, and rents. Mr. Loftus apparently relies on an unfounded parallel to areas where these differentials are slight.

(4) His statement that no attention should be paid to individual oil fields, because they are geologic rather than economic units, overlooks the locational aspect of the pricing problem.

(5) His implicit contention that the allegations of antitrust indictments to which defendants plead *nolo contendere* should be accepted as statements of fact (to do otherwise he alleges is unsophisticated) is naïve indeed. Pleas of *nolo* may be entered for a variety of reasons other than the defendants' guilt of all offenses alleged.

(6) Mr. Loftus refers to the "real relationship of United States [oil] prices and world prices" as something of which he is aware and I am not. This opinion is unsupported.

(7) He objects that 2-cent freight is not one-quarter of the 6-cent Texas wholesale gasoline price; it is 25 per cent of the 8 cent California price to which reference was intended.

Finally, he directs some criticism at the chapters or volumes I did not write on (a) world oil, and (b) conservation. The omission was deliberate, and, I believe, justifiable from the standpoint of my study; in any event, I made no pretense of treating these topics thoroughly. Generally, I suggest that analysis of the Pacific Coast petroleum industry should not be assessed *a priori* in terms of its congruence with analyses of other areas.

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BOOK REVIEWS

Economic Theory; General Works

Die Standortstheorie Alfred Webers: Studien über die Frage ihrer Gültigkeit und Fruchtbarkeit. By DR. ELISABETH NIEDERHAUSER. Staatswissenschaftliche stud. Vol. 14. (Weinfelden, Switzerland: Neuenschwandersche. 1944. Pp. 208. Sw. fr. 14.50.)

Dr. Niederhauser's competent study deals with the question of the validity and fruitfulness of the location theory which Alfred Weber first published in 1909. To this end, she first considers the place of Weber's theory in the general picture of location theory. She, therefore, critically summarizes the early reviews of Weber's work by Bortkiewicz, Schumpeter, Sombart and others. She then proceeds to the writers who have developed location theory further. These writers are grouped into those who basically develop Weber's theory, and those who fundamentally oppose Weber with a location theory based on general equilibrium. To the former group belong Predöhl, Salin and Ritschl. The latter group consists of Ohlin, Palander and Lösch, the three chief representatives of modern location theory. Of these three, Palander receives with no less than thirty pages the main attention of the author. Ohlin with four pages and Lösch with eight pages seem rather slighted.

The main purpose of the study is dealt with in its second part. The discussion of the first hundred pages showed that "it is always the same points which are the subject of discussion. These are primarily the questions of the nature and tasks of theory, its relation to reality, the limits of its validity, and the character of its explanations: whether the theory is causal or functional, static or dynamic, whether it is written from an accounting standpoint (privatwirtschaftlich) or from an economic standpoint. . ." (p. 96; my translation). To answer these points, Dr. Niederhauser applies the criteria developed by Max Weber and Eucken to Alfed Weber's theory. She thus finds that Alfred Weber deals with ideal types under competitive conditions, limiting himself to purely spatial problems. He disregards the general interdependence with other than spatial problems and considers only certain natural-technical conditions for locations of plants isolated from their market connections (p. 119). This summary is arrived at in the course of a lengthy chapter dealing with the validity and correctness of the theory. Of all criticisms of the internal consistency of Weber's theory, Dr. Niederhauser considers only one important and valid: "Weber's formulation of the results of transport orientation is inexact since it ignores the influence of the relation of the angles of the location-triangle on the position of the location, but draws conclusions from the weights alone" (p. 112; my translation).

However, her dismissal of the points raised by Bortkiewicz, Palander, Lösch and others does not seem quite justified. It is strange to read of Bortkiewicz's early criticism that Weber's model allows several possibilities and is inexact, that this may be possibly correct from a mathematical standpoint but is not decisive for the judgment of Weber's theory (p. 107). And the recurring criticism that it is illegitimate for Weber to assume prices as given is dismissed by stating that Weber has a right to his own assumptions, and that this kind of criticism affects not the validity but only the relevance of the theory. Variable prices are considered to belong to the ideal type of monopolistic economy to which Weber's theory is not meant to apply.

But evidently this is not quite correct and does not do justice to those critics who insist that general interdependence must be a part of the theory. The question does not seem to be one of competitive *versus* monopolistic assumptions, but rather one of partial *versus* general equilibrium assumptions. Since Weber deals not just with the location of one plant, but with whole industries, the assumption of given prices seems inappropriate and internally inconsistent with the rest of the theory.

One will have no quarrel with Dr. Niederhauser's estimate that Weber's theory was not only an epoch-making work at the time of its appearance but that even now, particularly in favorable cases, it may furnish good heuristic principles for empirical investigations. But I wonder whether, in her chivalrous attempt to be fair to Weber, she does not underestimate the contributions of Palander and Lösch. Particularly Lösch's contribution is done much less than justice.

W. F. Stolper

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Keynesian Economics. By Mabel F. Timlin. (Toronto: Univ. of Toronto Press. 1942. Pp. ix, 198. $2.75.)

Professor Timlin's volume represents a reformulation and expansion of portions of Keynes's analysis; drawing freely on the work of Lange, Hicks, Lerner, Robertson, and Ohlin. The fundamental statement follows Lange closely; the level of activity is explained in terms of three sets of interdependent functions: the Liquidity Functions, relating the rate of interest to the quantity of money and the level of income; the Multiplier Functions, relating consumption to income and the rate of interest; and the Investment Functions, relating investment to consumption and the rate of interest. Several pages are devoted to showing that, as defined in the *General Theory*, savings and investment are always equal, even when activity is confined solely to investment, solely to consumption, or solely to capital maintenance. Throughout it is made clear that the various concepts apply to a particular time period, which is defined in the same manner as the Week in Hicks's *Value and Capital,* although subordinate use is made of "models" in which contracts with the factors of production are made either before or after contracts for the sale of output.

The introduction is completed by a chapter devoted to the rôle of expectations, with special emphasis on their effect on the valuation of assets.

In the case of debts, for example, Professor Timlin considers that in the "orthodox expression" the present value of a bond is determined with reference to the size and number of annual payments, the principal amount involved, and "the" current rate of interest. For this is substituted a formulation in which the rate of interest is allowed to vary during every Week of the bond's life, a risk of default factor (differing each Week) is applied to the various payments and a coefficient of correction (also varying each Week) to each interest expectation, and an allowance is made for the marketability of the bond.[1]

Three chapters are devoted to a discussion of the factors determining the rate of interest. Perhaps the most original is that dealing with the relation of the interest-rate structure to general equilibrium under static conditions, which contains a description of an economy sufficiently thrifty to require a negative rate of interest as a condition for long-period equilibrium. The now generally accepted conclusion is reached that such an economy would suffer from chronic unemployment, as the "institutional minimum" rate of interest is clearly above zero. The analysis of the factors determining the rate of interest starts with the "orthodox" demands for money for "transaction," "finance," and "precautionary" purposes, which in combination make up the L_1 demand for money, following the notation of the *General Theory*. To this is added the L_2 demand, described as the demand for money as a store of value, to give "the general function which represents the total demand for money as a stock" (p. 67)—in other words, the Liquidity Function as a whole.

A second set of three chapters is devoted to the relationship between consumption and the level of income. After defining consumption, investment, and effective demand, the average and marginal propensities are developed at some length. An inverse correlation between the propensity and the rate of interest, it is argued, results from the fact that (1) increased rates cause capital losses and therefore make people less willing to spend; (2) increased rates induce people, in order to profit from the higher rates, to undertake saving now, which they had previously planned to do in the future; (3) increased rates make the distribution of income more unequal; and (4) higher premiums must be paid for additional saving if the disutility of increasing reductions of spending is to be overcome.[2]

The "logical theory" of the multiplier is developed in connection with the Hicksian Week in which foresight is perfect, so that complete and immediate adjustment "without time-lags" is attained. This is then contrasted with the time-consuming adjustments which take place in a supplementary model where foresight is less than perfect. The mechanism of the multiplier, which is de-

[1] The formulation is hardly definitive. Marketability also varies through time and a different default factor would seem to apply to payment of the final installment of interest and to repayment of principal. In addition, I would find more realistic a statement in which the rate of interest was kept separate from expectations regarding the value of money, rather than one in which they are combined.

[2] Points (1) and (3) are partially contradictory. If rising rates make *rentiers* richer, it must mean that the capital losses caused by the rise have been more than offset by the increase in interest payments; but this would mean that *rentiers* would be inclined to spend more rather than less.

veloped in some detail in connection with the Hicksian Week, has always seemed to the reviewer rather meaningless where perfect foresight prevailed. Surely perfect foresight includes a knowledge of Keynesian economics, so that if one additional unit of investment is undertaken, people will know immediately that income will go up by the value of the multiplier, without waiting for those receiving the proceeds of the new investment to contract to spend the increase in their incomes and so forth *ad infinitum*. If the adjustment is not instantaneous, what happens if the investment decision is made, not early Monday morning when there is still time for contracts to be adjusted, but late "Monday evening" as the contract markets are closing? But if it is instantaneous, then surely the sensible thing to do is for everyone to agree at once on at least the highest level of employment consistent with the underlying assumptions of the analysis, in which case there would not be any need to fuss with a multiplier. J. M. Clark long ago pointed out that, under perfect enough competition, there really would not be any point in bothering to compete; in the same way whenever there is a situation sufficiently perfect for the "logical theory" to apply, there really is not anything left for the theory to explain!

Finally, two chapters are devoted to the determinants of investment, completing the discussion of the fundamental equations; and the results are then gathered together in two chapters on the operation of the system as a whole, with a short note appended on the implications of the analysis. Starting with the process of valuation in the investment-goods industries viewed first from the side of supply and then from the side of demand, Professor Timlin discusses the schedule of the marginal efficiencies of capital and the structure and characteristics of the investment functions. The various concepts which have been developed are then shown to provide a solution for the systems as a whole, while the repercussions on the solution of changing values, especially alterations in the quantity of money, are also set forth. The final structural chapter is devoted to setting out the connection between the functional relationships as developed and orthodox equilibrium theory—with particular reference to the determinants of the level of employment. This is done, first, in connection with the stationary state, next in connection with an equilibrium whose stationariness cannot be maintained, and finally in connection with a model in which factor sales contracts are made before output sales contracts.

Some of the tools provided by the volume have been defined in such a way as to make them less useful than could be wished. To take a small but rather startling example, *net* investment is defined so as to include "any activity in the investment-goods industries which is the basis of an issue of new securities or an increase in the value of old ones" (p. 92). These words seem clearly loose enough to include in *net* investment refunding of an existing issue with new securities or even speculative rigging of the market, which is hardly a part of what Professor Timlin would want to characterize as investment.

In general Professor Timlin deserves praise for providing us with a straightforward and workmanlike statement setting forth and in many cases synthesizing the existing body of Keynesian analysis. The reviewer, however, ventures the opinion that the volume will not greatly advance our insight into the

operation of our economic system, although he warns the reader that he has been diverted during the war to other activities, so that his recollection of the state of existing doctrine may be greener than it should be.

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The Wealth of the Nation. By H. CLYDE FILLEY. (Lincoln: Univ. of Nebraska Press. 1945. Pp. xiv, 174.)

In writing his little book, *The Wealth of the Nation,* Professor Filley has attempted to translate economics into terms comprehensible to the layman, and he has aimed to do this in such a way as to educate the layman in an intelligent approach to the economic problems of the modern day. This is a formidable task. To carry it out successfully would require the combined abilities of the expert in modern economic theory and in the writing of good popular literature. If to this could be added a judicious mind, with the disinterested objectivity of the keenest of philosophers, it would be so much the better. It is no reflection on Professor Filley that he is none of these; few of us are so qualified. It is unfortunate, however, that Professor Filley seems to be unaware of the magnitude and requirements of the task he has set for himself.

Professor Filley says of his book that it "contains little that is new. It merely assembles in one place concrete data which support well-established economic theories." If such an assemblage were well selected and coördinated with economic analysis, it would be a truly creative job; this reviewer would hail such a work joyfully, whether or not it contained anything "new" in a narrower sense. But any book purporting to relate modern problems to the fundamentals of economic analysis should certainly contain something of the newly ripe, or—to use Professor Filley's words—the newly "established" contributions to economic thought, that is, the contributions made in the twentieth century. These are sadly lacking. And if Professor Filley's book contains little that is new, it contains much too much that is old. The theories and concepts drawn upon as the background of his work are those which were entrenched in the textbooks a generation ago; only a few of these remain "established" today. For whatever reason, he has failed to separate the wheat from the chaff. (For example, Boehm-Bawerk would find much of his analysis of "capital" both familiar and congenial; modern economists so divergent as Knight and Keynes would not infrequently shudder, and at the same passages.)

Professor Filley is conservative not only in his use of economic theory, but also in his method of presentation. He has not succeeded in escaping the shackles of textbook definition of such concepts as "factors of production," "wealth," and "income," all of which are presented in a crude form—no doubt for purposes of simplification. A book for laymen would certainly be more successful if it began with something other than definitions. This is in itself a minor criticism. However, these initial definitions as presented by Professor Filley are part and parcel of the deficiencies in the analysis underlying his

whole book. If he had managed to strike out more boldly at the beginning, the entire work would have gained accordingly.

Finally, Professor Filley's book is characterized throughout by a moralistic brand of conservatism relating to both public policy and private behavior. Thus private as well as public thrift is extolled in the good old Calvinist tradition; and a rigid gold standard is advocated on the grounds that gold as a substance has a "high intrinsic and relatively stable value" and that gold "has been used for money for about 5,000 years," etc. Examples of this type of argument could be multiplied many times. Perhaps Professor Filley is right in many of his judgments, but his arguments do not prove his conclusions and few marginal opinions would be swayed to his position.

It is not easy to discover how far the deficiencies in the analytical background of this book reflect inadequate knowledge of the content of modern economic thought, how far they reflect the conservative tenor of Professor Filley's approach to policy issues, and vice versa. The fact remains, however, that the single most consistent characteristic of his work is a conservatism that lacks imagination and that binds the writer to old concepts, old methods of presentation, old points of view, right or wrong. Professor Filley is to be commended for what he attempted to do; but he will have to cut some of the chains that bind him before he can accomplish it.

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Economic History

Beatrice Webb. By MARGARET COLE. (London: Longmans, Green. 1945. Pp. 197. 10*s*. 6*d*.)

Of all the personalities which have contributed to the development of the social sciences into recognized fields of study, perhaps none is more distinguished than Beatrice Webb. In the biography under review, Mrs. Cole, for nearly thirty years her intimate friend and fellow-worker in the Fabian Society, proves that although one instinctively couples Beatrice with her husband, Sidney Webb (or as A. G. Gardiner has described them "two typewriters clicking as one"), each partner enriched this intellectual alliance with a particular talent: she that of interviewing, he that of summarizing.

A number of individuals played important rôles in Beatrice Webb's transition from the drawing rooms of fashionable London to the arduous investigations of dock labor, the sweating system, the coöperative movement, trade unionism and Soviet Communism. Herbert Spencer was the greatest intellectual influence in Mrs. Webb's early life and it was to him that she owed the delight in collecting and verifying facts upon which her works were solidly founded. Her father, for whom she served as confidential secretary, trained her in methodical oganization and taught her to regard money as a business man treats it. This knowledge was of great value to Mrs. Webb in later life as she never suffered from timidity in action or from addiction to institutions and programs after they had outlived their usefulness.

Charles Booth, one of the first nineteenth century investigators to start without *a priori* assumptions about economic laws, introduced Beatrice Webb to the underlying causes of poverty, and stimulated her to evolve the techniques essential to the comparative study of social institutions. The articles emanating from this collaboration led to Mrs. Webb's appointment in 1905 as a member of the Royal Commission on the Poor Law, and to her drafting of the famous Minority Report which assumed, as did the recent Beveridge Report, the basic need for full employment, state medical services and a national minimum wage. This Minority Report ranks as one of the outstanding government documents of the century and was rewarded by the honorary doctorate given to Mrs. Webb in 1909 by Manchester University. It strikes to the very heart of the problem by, in the words of Mrs. Cole, "asserting the need for prevention, rather than cure, of poverty, for finding out why people become destitute, rather than attempting to relieve their destitution once it has become a fact." In addition, it asserts that the whole nation is responsible for poverty, and that the whole nation must actively search for a cure.

These and other intellectual excursions are faithfully recorded by Beatrice Webb in the volume titled *My Apprenticeship* and in the forthcoming *Our Partnership*. They are also to be found in her sixty-year diary which, when it reaches publication, will undoubtedly rank as one of the significant records of this age.

Perusal of Mrs. Webb's memoirs and the volume at hand clarifies her share in the establishment of the London School of Economics, to this day often referred to as "The Webberies"; her molding of the rising generation and especially certain members of the present Labor government; her formation of the Fabian Society which exercised a profound influence on British social thought and practice for more than half a century. More than that, these writings show Mrs. Webb's exceptional combination of such characteristics as disinterestedness, avoidance of public recognition and praise, cheerful acceptance of attacks and criticisms, a strong sense of the practical, and fundamental consistency and originality. They reveal, too, her ability to get on with all classes of people ranging from cabinet ministers to tailors' apprentices and colliery workers. The manner by which she thought her way to a Socialist attitude toward life, long before she linked her life with Sidney Webb's, remains unique in English history, as does her faithful examination of human and institutional material. "What was grist to her mind she gathered, and in collaboration with Sidney worked it into a corpus whose individual parts, in purpose and arrangement as in style, are so individual . . . that one can scarcely read a sentence . . . of one of them without exclaiming, 'This is the work of the Webbs!' "

Mrs. Cole's tribute to one of the greatest women of our generation, remarkable for her practical as well as for her intellectual courage, indirectly stresses the vital need for the dedication of both British and American social scientists to the search for truth, and it supplies insight into the demands placed upon the researcher of time, energy and money—demands which are only partly met by endowments and grants in the two countries. The recital of Beatrice

America's Place in the World Economy. Addresses delivered at the Fourth Series of Conferencs of the Institute on Postwar Reconstruction. Edited by ARNOLD J. ZURCHER and RICHMOND PAGE. (New York: Inst. on Postwar Reconstruction, New York Univ. 1945. Pp. xi, 250. $3.00.)

Never has there been so much discussion—public and private, oral and written, on the air and on paper, scientific and popular, practical and theoretical, in monographs and articles—as there is now on the necessity and methods of international economic coöperation and America's international economic policy. If things do not work out as desired, it is certainly not due to lack of awareness of the problems involved. A perusal in 1946 of the present volume, an excellent specimen of this kind of literature (containing papers that were written about two years ago), leaves one with the disquieting impression that history seems to unfold its pattern with supreme disregard for what the great majority of experts and men of goodwill say should happen.

The contributions to the present volume are well selected to give a rounded picture and are all on a high scientific level. Gideonse and Condliffe start the procession with a discussion of over-all principles of America's International Economic Policy. Gideonse pleads for a frank and open statement of policy. For example, "If we are going to make gifts, it is more desirable . . . to make them openly and consciously. It will be an economic as well as a political and intellectual disgrace to repeat the 'credit' blunders of the past postwar period" (p. 5). But if it is impossible to make gifts openly, is it better to make them not at all or to make them in the form of "credits"? Mr. Gideonse does not say. Mr. Gideonse calls for a "wise peace with Germany" without saying much what it should look like. But it was hardly necessary then. These were the days of the Atlantic Charter and not of the Potsdam Agreement.

Marcus Nadler speaks optimistically of post-war private trade financing (without paying much attention to the overridingly important political conditions), and H. D. White, of Bretton Woods. Herbert Feis discusses the prospects of Investment of American Capital Abroad. He calls for public and international development loans. Corwin Edwards sings his song against International Cartels—a formally flawless performance. Still he seems to me to exaggerate when he says that "private restrictions of international cartels are comparable in breadth and severity to the restrictions imposed by governments. . . . To attack governmental trade barriers and leave private trade barriers untouched would be illogical and ineffective" (p. 106). Illogical yes, but not ineffective, because private restrictions are less important and depend to a large extent on governmental support (tariffs). Redvers Opie's Critical Appraisal of the International Cartel reflects, as a useful antidote to the preceding paper by Edwards, the skeptical and somewhat cynical attitude of the old world.

W. H. Chamberlin gives an objective, sober, well-informed analysis of the chances and problems of American-Russian trade which should put the reader in the properly skeptical frame of mind for the following somewhat exuberant official estimates and expectations of Mr. E. C. Ropes.

The two papers by W. Y. Elliott and F. D. Graham on Anglo-American

Economic Problems supplement each other very nicely. Professor Elliott dwells upon the geopolitical setting of the economic problem and asks for British concessions to the United States in the field of raw materials and bases. On the whole, he is rather pessimistic for Great Britain's economic and political future, and its balance of payments position. Professor Graham, on the other hand, displays a most refreshing and unusual optimism. His paper abounds in statements which are exactly the opposite of prevailing views. "In Britain the rehabilitation of devastated areas and the supply of other urgent and long-starved consumers' wants can in large part be met with equipment and materials now used for purposes of war. Since the proportionate change-over to new equipment will be greater in the United States, our difficulties during the transitional stage seem likely to be much more severe than those of Britain" (p. 204). "The provision of full employment is solely a problem of maintaining the people's monetary expenditure" (p. 205). Is it really that simple? Is the problem of sectional unemployment and depressed areas entirely insignificant? Professor Graham is probably right when he says that for the United States the importance of international trade as a factor of prosperity is overrated. But he goes on to say, "This is true even for Great Britain . . ." (p. 206). Is it not a little misleading to say that "international trade, per se, has little bearing on the matter of employment"?

"In spite of much reputable opinion to the contrary, I do not think that the British have much cause for worry over their long-run economic and financial situation. Their total receipts in capital investment from abroad were never more than a small fraction (about five per cent) of their national income. . . . The British per capita productivity has been greatly raised during the war, and this will be a permanent gain. If the British fail to develop a greatly expanded export trade . . . they will be of course compelled to reduce the volume of imports. But this need not greatly affect their prosperity or ours. . . . The long-run picture for Britain is, in my judgment, not nearly as black as it is currently presented. It is, I think, not black at all" (p. 209).

These are strong words, especially for an ardent supporter of Britain and of American-British coöperation. I much sympathize with Professor Graham's point of view, and I hope he will soon find an opportunity to argue his case more fully and to support it by a detailed criticism of the prevailing opinion. It is, however, to be feared that the naked statement of his position, as presented in the present volume, will not carry much conviction.

The last two essays by Carlos Dávila and Clarence Senior deal with Latin Amercan and the Good Neighbor Policy.

GOTTFRIED HABERLER

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Pioneers in World Order—An American Appraisal of the League of Nations. Edited by HARRIET EAGER DAVIS. (New York: Columbia Univ. Press. 1944. Pp. vii, 272. $2.75.)

Mr. Arthur Sweetser explains both the origin and the purpose of this book in the opening chapter:

Over a hundred . . . American citizens came together twice during the war at the Institute for Advanced Study in Princeton, once in 1940 and again in 1943, to attempt to apply the lessons of their past experience to present-day problems. A representative group were requested to prepare memoranda drawing out of that experience the highlights they would like to present to the designers of the "general international organization" to follow this war. . . . These memoranda . . . constituted a sound introductory starting point for approaching the next settlement in a logical and orderly way, and the authors were invited to revise them for publication in this book as a kind of testament from the past to the future. . . ."

Pioneers in World Order is thus a symposium, and it has the great merit that all the contributors to it have had some direct personal experience of international work on the subjects on which they write. As is perhaps inevitable, they have interpreted their mandates somewhat differently. Some have devoted themselves mainly to reviewing the activities of the League of Nations or the various bodies connected with it, pointing out the difficulties which presented themselves and describing the manner in which and the success with which those difficulties were faced. This is true in varying degrees, for instance, of Miss Sarah Wambaugh's chapter on the Control of Special Areas, Mr. Herbert L. May's chapter on Dangerous Drugs, and Mr. James G. McDonald's chapter on Refugees.

Others have concentrated rather on the lessons to which they wish to draw attention and the manner in which the United Nations should act in the light of these lessons. To some extent Mr. Sweetser adopts this line, though his constructive conclusions are tentative and take the form rather of suggesting possible alternatives than of firm recommendations. Mr. Huntington Gilchrist, on the other hand, concludes his very interesting chapter on Dependent Peoples and Mandates with a list of "Suggested Changes in the Mandates System" expressed almost in the categorical imperative. Dr. Boudreau, reviewing the International Health Work, gives a list not of required changes but of primary objectives of policy. Definite and clear-cut conclusions of this sort written by persons who have real knowledge and experience to back their views add greatly to the immediate value of the book and, moreover, render it more readable. But history is moving so fast today that these more constructive chapters may prove to have a more fleeting interest.

Professor Shotwell in his chapter on Security takes still another line. He propounds an historical thesis briefly, lucidly and cogently—an historical thesis which seems to me to be false. His contention is that the failure of states to ratify the Geneva Protocol of 1924 was the cause of the League's failure to maintain peace. "Therefore, when a few months later the MacDonald government was replaced by a Conservative government in Great Britain, the Protocol failed of ratification there. This dealt the fatal blow from which the Protocol and the League never recovered." France demanded the Protocol because she felt rightly that her security and the whole system of collective security under the Covenant were seriously jeopardized by the fact that the United States had not joined the League.

Professor Shotwell is arguing, therefore, that even without the United States peace might have been maintained. He may or may not be right. If

he is right, then it was surely not the lack of the Protocol, which was mainly concerned with defining an aggressor and an act of aggression, but the sudden abandonment of sanctions against an aggressor which had been formally defined and condemned to which the failure to maintain peace must be attributed. But in his whole chapter Professor Shotwell never mentions the Hoare-Laval scheme and seems to believe that the Italian sanctions did not succeed because no oil sanction was imposed. This is a popular thesis which has always received the ardent support of those who wish to direct attention away from the Hoare-Laval incident. I happen to have been in charge of sanctions at the time, and do not believe it has any sort of justification. Italy's reserves of oil were adequate for half a dozen Ethiopian campaigns. It would have made no strategic difference had she received no single ton of oil after the first measures for controlling her trade were adopted.

What was important in the history of inter-war security measures was the gloss on the automatism of the sanction clauses of the Covenant introduced in 1920. Though this gloss had no legal status, it was accepted as the basis for action and gravely weakened the whole system. The existence of that gloss was of far greater historical importance than the non-existence of the Protocol. Because of it governments felt justified in not acting up to their contractual obligations. And it was this failure to act under the Covenant, and not the inadequacy of the Covenant itself, that led to disaster. First the sanctions imposed were incomplete and then they were undermined.

Taking the volume as a whole, the history is careful and the lessons drawn, whether one agrees with them or not, are always interesting. There are one or two passages, however, where the historical judgment may be questioned. Thus, to quote one only, Mrs. Puffer Morgan in the course of a remarkably clear account of the Disarmament Conference says: "Success might have been reached had not progress been interrupted by the World Economic Conference in London." This statement reflects an *ex post facto* optimism which certainly very few of those who were working in Geneva at the time would share. The Monetary and Economic Conference should never have been convened when it was and certainly would not have been had advice in Geneva been sought; but the belief in Geneva was general that the Disarmament Conference was on the shoals before the London Conference ever met.

The chapter on World Economics is slight, but manages to give in a short compass the major issues of development up to and after the outbreak of war. It ends on a courageous note:

> The technical solution of the major economic problems—such as tariffs and other obstacles to trade—on which it [the Economic and Financial Organization of the League] was mainly engaged, depended ultimately on political decisions. If no agreement was reached, or if the recommendations of the Organization were not followed, reasons of national policy rather than defects of organization or technique were to blame. If economic coöperation is to be effective in the future, national sovereignity must be limited over large areas of economic policy.

Is this right? Is national sovereignty really limited if two or more states enter into a contractual obligation to do something sensible or not to do some-

thing foolish? Or can they never be trusted to be sensible? Perhaps the note is not courageous after all.

I have spoken above of chapters. But in fact the book is not divided into chapters. It consists of a Preface by Mr. Raymond Fosdick and seventeen essays by sixteen authors, Dr. Boudreau contributing two, and covers almost all the activities of the League. There is a certain fascination in watching these sixteen minds viewing the various facets of international life in retrospect and prospect. In general the conclusions drawn are along the lines of previous evolution—they are strictly lessons from experience. It is to be hoped that those who will have the opportunity of making new mistakes will, when availing themselves of that opportunity, also consider some of these lessons. Certainly the book is worth while.

A. LOVEDAY

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Business Finance; Insurance; Investments; Securities Markets

The Pattern of Corporation Financial Structure: A Cross-Section View of Manufacturing, Mining, Trade, and Construction, 1937. By WALTER A. CHUDSON. (New York: Nat. Bur. of Econ. Research. 1945. Pp. xiv, 146. $2.00.)

Corporate Cash Balances 1914-43: Manufacturing and Trade. By FRIEDRICH A. LUTZ. (New York: Nat. Bur. of Econ. Research. 1945. Pp. xiv, 128. $2.00.)

These studies are two of the series made under the Business Financing Project of the National Bureau of Economic Research.

The Chudson study is almost entirely of 1937 data, although occasional reference is made to other years, chiefly 1931. The figures are for "industrial" corporations as reported to the Bureau of Internal Revenue, which the Bureau uses in its *Statistics of Income,* but are from detailed unpublished tabulations. Tabular material used in this and other studies of the series will appear in a later publication of the Bureau to be entitled *Corporate Financial Data for Studies in Business Finance.* These "industrials" include manufacturing, mining, trade, and construction, and exclude the service, utility and finance industries.

By "pattern of corporate financial structure," Chudson means the ratios of the various major asset and liability items to total assets and to sales. Some other ratios, such as the current ratio, the interrelation of certain working capital items, and the ratio of invested capital to capital assets, are also included.

The result is a mine of ratio information which has more than ordinary value and interest because of the size of the sample and the presentation of data by subgroups. Thus, many of the ratios are not only reported for the same three score of minor industrial subgroups but also variations in the ratios are given for the corporations of different size (measured in assets) and as between

"income" and "deficit" corporations. The resulting ratios appear to have greater utility and typicalness than most samples which often show the influence of a few larger corporations, or nonhomogeneous companies. The consistency of the results which show regular gradations in the ratios for the corporations of various sizes in a given industrial division (as in Chart 3) with few erratic variations supports this impression of typicalness.

The conclusions, which are too many for enumeration and in any case must be read in relation to the interpretative background for full appreciation, include both the expected and the unexpected. Thus, findings confirm the generally held views regarding the positive association of profitability and corporate financial liquidity, as reflected in the current ratio, the relatively greater use of bank borrowing by small than by large corporations, and the decrease of both current assets and current liabilities to total assets with increasing size of corporation, but a greater decrease in the current liabilities. Unexpected are the findings that large and small corporations rely to about the same extent on trade credit to finance current ouput and that larger corporations have lower inventory turnover than small corporations. (The only exception to the latter is the retail trade group where size shows no clear-cut influence upon the inventory to sales ratio [Chart 3]). The explanatory hypothesis of increasing integration as size of business increases is supported by the correlation of size and the fixed assets to sales ratio (Chart 11). This latter point suggests that larger retail trade units may be showing an inventory turnover similar to that of smaller units in spite of the assumption of additional functions, such as wholesaling, warehousing, and occasional processing.

Chudson is careful to point out the absence of any normal or typical pattern for the economy as a whole but indicates that within the particular industry, size, and profitability groups there is a clustering of ratios (p. 6). He adds: "As criteria for credit analysis, therefore, financial ratios take on significance only when compared within a given class of concerns or when examined for the same group of firms over a period of time." The statement shows no espousal of the idea that the average ratio as a "standard" or "ideal" should be regarded as do certain writers. Where "central tendency" is found the credit analyst would, of course, do well to examine deviations for their possible relation to either solvency or profitability.

Some questions as to significance or utility of the data will occur to a reflective reader:

1. Where the ratio is based upon year-end balance sheet data which is subject to possible seasonal variation, *e.g.*, notably the relation of inventory and accounts receivables to sales and to total assets. The author mentions the point but it merits emphasis.

2. Certain ratios of doubtful utility, such as the ratio of notes payable (bank loans) to sales, surplus to assets, short-term debt to long-term debt.

3. The typicalness of certain average ratios where those ratios for the "income" corporations of the several industries appear to show a poor rank correlation with the similar ratio of "deficit" corporations. *E.g.*, inventory to sales (p. 19) as compared with what appears to be a superior rank correlation of inventory to assets (p. 23).

4. The representativeness of ratios so largely calculated for the single year, 1937.

The Lutz study of *Corporate Cash Balances, 1914-43,* is based on data from a limited sample of major well-known manufacturing (81) and trade (9) corporations which publish their financial statements and of medium-sized and small manufacturing (73) and trade (30) corporations whose figures are drawn from tax returns filed with the Wisconsin State Tax Commission.

As the title indicates, the study is centered on the movement of corporate cash balances for the period 1914-43. Comparisons are also made of total means of payment with cash balances of all manufacturing and all nonfinancial corporations reporting to the Bureau of Internal Revenue, 1926-36 (p. 10), as well as of total means of payment with cash balances of the samples of large and of small and medium manufacturing corporations, 1915-43 (p. 14). After this picture of cash fluctuations, an analysis is made (chap. 2) of the annual changes in the major asset items for the samples of companies to show the net absorption or release of "funds," which are intended to reflect the cyclical shifts toward and out of the asset "cash."

There follows (chap. 3) an artificial reconstruction of cash payments and receipts by inference from the balance sheet changes and the income statements of the sample corporations (described in Appendix C). By comparison of the year-end cash balances with this volume of receipts and disbursements (chap. 4) for the period 1919-39, the author arrives at relationship between the two during the "normal" 1920's from which ratio he computes an estimate of "transaction" cash figures or balances which he deduces are essential to handle transactions. Any remainder of cash is then labeled "free" cash.

The balance of the study is concerned with an analysis of this "free" cash, the liquidity ratios and cash balances, the liquidity of the manufacturing sample during the two World War periods and the trade sample over the entire period.

The chief impression gained is that the study supports that school which accuses "private enterprise of contributing to the stagnation of the economic system of holding excess cash balances (instead of investing them) and thereby counteracting the stimulant effect of deficit financing" (p. 2). This impression grows out of the emphasis on certain calculations which purport to divide corporate cash balances into "transaction" cash and "free" cash even though the author is careful to put quotation marks around these terms and never adopts for his own such allegations against business. The validity of such a concept of "free" cash hangs upon the theory that business should regard as normal cash balances a fixed percentage of current receipts or disbursements.

For anyone unfriendly to this "hoarding" theory, suitable points could be raised from the study itself. Thus, it could be argued that "need" for cash to care for "transactions" or payments fluctuates during the cycle because of the fluctuating turnover of receivables and inventories. When cash flows in more slowly from customers, relatively more cash on hand is needed to cover expected payments with a given degree of certainty or assurance. Lutz himself lists the five reasons (pp. 37-39) why business corporations cannot be

assumed to hold cash for expected future payments in a fixed ratio to those payments. Underemphasis plus the probable tendency to interpret most of these factors as "store of value" rather than "circulating medium" uses of cash will lend aid and comfort to followers of the business "hoarding" theory.

Whatever cyclical change there may be in liquidity preference it does not appear to be any more characteristic of business corporations than other sectors of society so far as comparative cash holdings show. The ratio of year-end corporate cash balances to the total nation's means of payment shows no cyclical movement (1926-41) for all reporting manufacturing corporations and only slight cyclical movement, if any, for all nonfinancial corporations (pp. 10-11).

Examination of the liquidity ratios (*i.e.*, ratios of current assets, quick assets, cash and marketable securities, and cash to current liabilities) for the sample of larger manufacturing companies supports the thesis that, in general, business shows greater liquidity in depression and less in prosperity (p. 61). However, the sample of small corporations gives no similar clear-cut picture (p. 64). Lutz concludes that these customary liquidity ratios are of little importance in a study of corporate cash balances but that certain other ratios, such as cash and cash plus marketable securities to cash payments, are the most important in measuring the liquidity of the aggregate of corporations (p. 66).

An examination of the figures in this Chapter 6 reveals how small the cash is in the total current position and how small its fluctuations are in relation to the fluctuation of the other current items. Similarly, Chapter 2 shows how tiny the cash changes are from year to year as compared with those of all other assets of large manufacturing companies so that the "inflow and outflow of funds" clearly is not an inflow and outflow of cash but expansion and contraction of liabilities which latter are not presented or discussed. Since cash and changes in cash are so small in absolute amounts, it is clear that they can be significant only as a relative matter. Since the aggregate of cash is limited and the holdings of business corporations are an almost constant fraction of the total, it raises the question as to whether such discussion of shifting into cash and back into operating assets is not definitely misleading.

Certain other secondary points will doubtless be questioned by various critics: some economists will query the inclusion of time and savings bank deposits in the total "means of payment" (p. 113); statisticians will question the validity of comparing year-end cash balances with total payments, since there might be some window-dressing of cash, the extent of which might vary cyclically, and they may have some doubts as to the adequacy of the samples, particularly of small corporations; and accountants will lift an eyebrow over a computation of total nonoperating cash expenditures that are inferred from net annual changes in certain balance sheet accounts such as plant or long-term debt (p. 110) or reference to "the 'net income' shown in the balance sheet."

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Public Control of Business; Public Administration; National Defense

Agricultural Price Control. By GEOFFREY S. SHEPHERD. (Ames, Iowa: The Collegiate Press. 1945. Pp. vii, 355. $3.75.)

Governmental efforts to fix *minimum* prices of farm products is the chief topic of this book, although a brief summary of wartime maximum price control is included. Mid-1945 was the ideal publication date for such a study for, with V-J Day past, the nation is faced with the promise we made in 1942, that the government will support the major portion of farm product prices at 90 per cent of parity for two years following the end of the war.

The book performs three useful functions: it provides a ready summary of minimum price control experience, it contains a critique of methods and results, and it gives some concrete suggestions for the future.

Starting with the question, "Is it necessary or desirable to control agricultural prices at all?" the author answers affirmatively because in his judgment inherent features of agricultural production and consumption prevent free market prices from regulating agricultural production and consumption satisfactorily, particularly in the short run. Our minimum price control experience, for which we have paid such a "high tuition," should guide us, as a nation, in deciding what we want this price control to accomplish, in working out a logical program, and in carrying it through with the highest of managerial skill.

After reviewing the old Farm Board's operations, the author holds that the proper conclusion "is not that the Board, in trying to stabilize prices against fluctuations in supply and demand, was chasing after a will-o'-the-wisp that could never be caught; the trouble was rather that the Board did not have enough power to catch it. . . . The Board suffered from bad luck [started just before collapse of prices generally] as well as inexperienced or short-sighted management and lack of political support" [lack of enough funds] (pp. 35-36).

With reference to the experience after 1932, the author makes only incidental reference to the acreage restriction activities of the Agricultural Adjustment Administration which he holds were offset by higher yields on the remaining acres. The burden of several chapters is review of the Commodity Credit Corporation's program of stabilizing prices against fluctuations of production and of demand, and of raising farm prices over a period of years. This program worked well in the years of rising demand and drought-limited crops from 1933 to 1937. In late 1937, however, "it suddenly became apparent that the C.C.C. had been skating over thin ice" (p. 46), that the Corporation was on the road to "commit a farm board" (p. 78), and that over its whole operations from 1933 through 1941 it "had a happier history than the Farm Board, chiefly because of the more favorable economic circumstances in which it operated" (p. 78). These circumstances were its birth in a depression and the chance to ride the prosperity wave, two bad drought years to cut supplies, and finally, the wartime food demands after 1941 which bailed the government out of a bad situation.

In all "The most obvious and persistent error in the policies of the C.C.C. has been its attempt to raise the level of the prices of the 'basic' commodities over a period of years" (p. 80), by storage or loan devices. The author finds it difficult to appraise C.C.C.'s effectiveness in carrying out its other two objectives, partly because its operations were in a period of rising demand that ended with accumulated stocks in 1941, but chiefly because the perversion of the C.C.C.'s activities into an attempt to raise the level of farm prices so confused effects that no judgment on the accomplishment of other objectives could be reached.

With respect to efforts to increase demand, the author's findings are not encouraging. Subsidized domestic consumption exercises less upward pull on farm prices in the long run than in the short run. The cotton and wheat export subsidies cost the domestic consumers and the government together more than they raised prices to producers.

Turning to local stabilization activities, the author finds that marketing agreements for milk and fresh fruits and vegetables have improved the functioning of the local markets in which they operate but at the expense of the consumers. He does approve the use of agreements to obtain the maximum prices for growers when markets are not "fully competitive" (p. 260), or where farmers suffer the effects of lack of information. Thus, marketing agreements may provide some of the effectiveness of large-scale business, but at the same time there is a temptation to raise prices "above long-run competitive levels [which] would be harmful to consumers, and in the long run, to producers also" (p. 261).

This hasty summary of the author's review of minimum price control history omits mention of some excellent technical chapters. One (chapter 6) applies some of the author's earlier work to the effect of C.C.C. stabilization activities on geographical and grade price relationships. Chapters 8, 9, and 10 develop methods for stabilizing prices of corn, wheat and cotton, respectively, against fluctuations in production, in which the program arrived at for each product is affected by such factors as elasticity of demand for the commodity and the rôle of imports and exports.

In the closing chapters the author looks ahead to the post-war problem. The factors making for holding up agricultural production appear to be far stronger than those for holding up demand, both foreign and domestic, to wartime levels. Passing quickly over the immediate post-war problem, the author presents a cogent critique of parity, which ends with the telling point that this guide to policy is a guide to desirable farm income levels, but, unfortunately, it not only is inadequate for that purpose, but it also impedes the primary task of prices, that of governing farm production.

After having distinguished the rôle of price as guide to the production of particular commodities and as the determinant of the level of farm income, the author's suggestions deal almost exclusively with the former. His chief proposal deals with the stabilization of supply by means of "forward-pricing," supplemented by a storage program for non-perishables to equalize the influence of yield variations. Forward prices would be set by examining the elasticity of demand and elasticity of supply for various farm products.

"When prices for each product are finally worked out, they could be published along with the physical production goals as the prices estimated to be necessary to induce the production of the quantities of the different products specified in the goals. These prices would represent economic bench marks that would constitute at least a definite basis for arguments about the levels at which the forward price floors should be set" (p. 341).

Concerning this program, the reviewer will make three comments:

1. The techniques suggested for fixing forward prices and for determining storage operations rest heavily on analyses of the demand elasticity and the supply elasticity that have existed during an era of unstabilized prices. In addition to the well-known weaknesses of such analyses, the author uses statistical analyses of data from an era of unstabilized prices as a basis for evaluating the benefits of his program and for reaching conclusions as to the merits of alternative techniques for use under conditions of stabilized prices. When prices are not stabilized much of the elasticity of demand for particular farm products arises fom the substitution of one product for another such as feed wheat for corn and vice versa, as the price of one falls compared to the other. Similarly, much of the shift in acreage devoted to particular crops arises from past price experience, tempered by varying degrees of uncertainty of future prices for various products. What happens to the elasticity of demand when all prices are stabilized? What differing elasticities of supply will be experienced if and when farmers look forward to minimum price certainty? An obvious answer to this citicism is that elasticities based on past behavior can not be followed blindly, but must be tempered. But tempered on what basis? Judgment presumably.

At best forward prices would have to be based on elasticity of supply *estimates,* elasticity of demand *estimates,* and intensity of demand *estimates.* That leads to a dilemma. If a sizable tolerance is allowed for such errors and support levels are placed well below forward price levels, then actual market prices may fail by a large margin to equal the forward prices and farmers will lose confidence in the plan. If, on the other hand, the tolerance is small (other supporters of forward pricing have suggested only 5 or 10 per cent), then an error in forward pricing may have the effect of encouraging an oversupply and thereby of imposing an impossible carryover problem.

2. This leads to the second criticism, namely, that the author proposes that, with the exception of perishables, the government make good on its forward price commitments by loan rates or other devices which place a floor under market prices. Clearly consumption would remove more surpluses if market prices were left free and farmers given supplementary payments. This is rejected by the author on administrative grounds (and farmers oppose such a plan also). That leads the author to a plan of rigid price floors, the consequences of which can be disastrous if significant errors are made in forward pricing.

3. There is a fundamental conflict between the "forward-pricing" technique and the economic-political problem faced. This forward-pricing technique is an adaptation of the support price program used during the war, whereby guaranteed prices were set at levels needed to call forth the

desired production. Total agricultural production was stimulated thereby, and within agriculture some uses of land and feed were *encouraged more than others*. So far as the reviewer knows, no farm price fell during the war, and few, if any, even of products not desired by the War Food Administration, failed to enjoy increases in prices equal to or greater than increases in costs. It is easy to stimulate total production by higher prices or to get relatively more of one product by raising its price relatively more. It is another thing to lower support levels for some or all products absolutely. Resistance both political and economic to absolute declines in production are far different from impediments to absolute increase in production. This seems to be acknowledged by the author when he says that farm incomes "adequate to keep production forthcoming . . . would be lower than income for comparable work in other lines" (p. 342). One could go further and say, "incomes lower than agriculture will accept as the objective of national policy."

Are forward prices to be set at levels which would call for the desired production if total agricultural capacity were adjusted to demand so as to yield the desired level of farm income? Such an assumption is counter to the author's prognostications, for he expects that agricultural capacity after the war will be considerably above this level. If forward prices were to be set on such a false assumption, the prices would deter to a marked extent the contraction of capacity and burden the market with surpluses. Or are the forward prices to be set at levels which will bring forth the desired production when agricultural capacity is in fact above the level compared to demand which would provide the desired farm income? Clearly, with agriculture's well-known resistance to a decline in capacity in mind, prices set on this basis would be well below those set on the former basis. In fact, these forward prices would have to assume the burden of driving out excess capacity and they would provide a lower level of farm income than farmers consider proper.

This indicates clearly that, after having sought to cut loose his forward-pricing program from responsibility for total capacity and the level of farm incomes, the author's plan must lead him back into this dilemna. Not only does forward pricing in principle get into trouble by washing its hands of this larger problem; it will not be acceptable to farm groups. Clearly they, and I suspect most economists, hold that the income or demand compared to total capacity problem of agriculture is the basic problem. Only in a supplementary sense is the guiding of shifts within agriculture a problem at all, even when one grants the blind character of acreage shifts, for example.

The author recognizes that his program does not care for this longer-term problem of agriculture. However, except for some admonitions about the necessary rural-urban population shifts, he rejects such suggestions as acreage control as having no lasting effects on output, supplementary income payments as holding up capacity when it should be reduced, storage as only a temporary palliative, and so on.

Aside from failing to note the conflict between his forward-pricing plan and the existence of excess capacity, this unsatisfactory ending should not be held against the author. It merely represents the dilemna we face, that the income level demanded by farm groups, in light of the high capacity of post-

tion charges—GR-S will sell for as low as 14 to 16 cents a pound. No one can tell, of course, what new developments will occur in the production of synthetic rubber. If the last three years are any guide to the future, it is not at all impossible that the synthetic might be superior to the natural in quality and lower in price.

For a time, of course, natural rubber will continue in short supply. When the surplus stage is reached there is no telling what its price will be. It will depend upon how far the estates go, or are forced to go, in "rationalizing" their production. If inefficient operations are eliminated it is possible that natural might sell for as low as 8 or 10 cents a pound.

With both the American synthetic industry and the Asiatic natural rubber industry characterized by high costs for a substantial proportion of their output, the situation is ripe for "cut-throat" competition. If important new uses for rubber are found and if both the natural and synthetic industries were to stabilize at roughly one-half of their present capacities, both could undoubtedly survive on a reasonably prosperous basis.

So far as the United States is concerned the rubber problem is complicated by the requirements of national security. The author believes that a stockpile of natural rubber comprising one or more years' normal requirements of rubber should be maintained and that around 200,000 tons annual output capacity for general-purpose synthetics should be retained for this purpose. He doubts the feasibility of keeping plants in "standby" condition and does not look upon a tariff on natural rubber as being desirable. It might be feasible to adopt some form of direct subsidy. But, if this is done, he believes there should be a well-defined procedure for periodically examining and revising its amount. Whatever protection is granted should be selective and confined to no more than one-fourth of the capacity built during World War II.

Dr. Knorr's book should be "must" reading for those who are in any way responsible for formulating this country's rubber policy. He has provided a back drop of the world rubber problem of which this country's problem is but a part, though an important one. He has sketched the general direction in which we must go if we are to live up to the Good Neighbor policy without sacrificing our own vital security needs. At a few points the book is slightly repetitive and at times the style is a bit heavy. But these are only minor defects in a work that is otherwise thoroughly scholarly.

HOWARD S. PIQUET

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Economic Geography; Regional Planning; Urban Land; Housing

TVA, Democracy on the March. By DAVID E. LILIENTHAL. (New York: Harper. 1944. Pp. xiv, 248. $2.50.)

This book is the story of a great change in the Tennessee River drainage basin. It is a story of a river which has been brought under control, and put to work in the service of mankind. It is a story of land, whose fertility has

been renewed, and of forests that have been refreshed with young growth. Even more it is a story of the people and their building of a new valley. But it is not essentially a history of the region (and the part that the Tennessee Valley Authority has played in its development). Rather it is a book about tomorrow, its fundamental purpose being to show how the experience of the TVA can be drawn upon to safeguard the future course of resource development in the valley and elsewhere in the country (and the world, for that matter).

Though the author, the well-known chairman of the board of directors of TVA, naturally favors the creation of other regional authorities employing TVA principles, he has a deeper purpose in writing this book than such advocacy. He is especially concerned that science and technology be combined with nature in such manner as to improve the standard of living of people, in this country and abroad, in other words, with resource development. He calls this "The Grand Job of This Century."

The job of resource development must be undertaken, of course, with a moral purpose; it must be conceived and carried out for the benefit of the people, rather than special interests. But high purpose alone will not ensure that resource development be a blessing rather than a curse. The author, drawing on the experience of the TVA, insists that two other principles must be followed.

The first principle is that resource development must be governed by the "unity of nature"—the unity that binds together streams, land, forests, minerals, farming, industry, and mankind. A river must be envisaged in its entirety. In its development regard must be had to the need for electric energy, channels for navigation, a water supply for domestic use and irrigation, facilities for recreation, including swimming, boating, fishing; and protection must be provided against floods, soil erosion, and stream pollution. In the case of the Tennessee River and its tributaries Congress directed that all of these functions should be entrusted to one agency; the resources of the valley were not to be broken up into separate parts that would fit into the traditional governmenal scheme of administration.

In this respect the action of Congress represented a sharp break with the past. There were, to be sure, well-established precedents for government activity in flood control, navigation, power, agriculture, forestry, and research, but hitherto no single agency had been entrusted with the unitary task of developing a river so as to release the total benefit from its waters to the people. This was virtually revolution in government administration. And as an important corollary this step placed upon TVA the full responsibility for success or failure. Being largely freed from jurisdictional disputes, and being solely responsible for the selection and promotion of its personnel under a legislative mandate to permit no political test or qualification in the selection or promotion of employees, the TVA could not escape accountability, should it fail in its designated task.

The second principle is that the people must participate actively in the job of resource development; this is the only way the job can be done effectively.

A method of resource development that draws in the average man and woman, and makes them a part of the job, in the day-to-day work in the field, factory, and office, will tap riches of human talent that can never be enlisted by any highly centralized, dictatorial, and impersonal system of development. It is just such widespread and intimate participation of the people in the development of their valley that has characterized the operations of the TVA. The job of region building has been carried out at the "grass roots" in almost every phase of the TVA's life—among farmers, workmen, business men.

The grass roots policy has been extended also to the state and local governments. The author asserts that it is true without exception that, whenever a state or local agency can perform part of the task of resource development for which TVA has the primary responsibility, the endeavor has been made to have them undertake it. It can not be disputed, he says, that the state and local governments are stronger now than they were when the TVA was created. Among his illustrations is the public park system. When the TVA was created the state of Tennessee had no department of conservation, no state park system and no county park areas; but now it has a conservation department and one of the best state park systems in the Southeast.

Encouraging in these days of federal centralization are Mr. Lilienthal's views with regard to the desirability of decentralizing the administration of the functions of the central government. He recognizes fully the need for a strong central government, but he objects to the remote and absentee control associated with centralization in administration. It does not follow merely because power is granted to Washington that it must be exercised there. Our task, he says, must be to invent devices of management that will permit many of the powers of the central government to be administered in the field, and not from Washington, where "there is and always has been so much bureaucratic spirit, such organizational intrigue, so much pathologic personal ambition, so many burning jealousies and vendettas." Democracy can not thrive in such an atmosphere.

If this state of affairs continues, one of two things will ultimately happen. Either the distrustful citizens will deny the national government the powers it should have in the national interest, or an arrogant central government will impose its will by force. In either case the substance of democracy will have been lost. Those who believe in democracy must, therefore, prevent the administration of affairs from becoming so concentrated in Washington as to deaden the average citizen's sense of participation in government, for in citizen participation lies the vitality of democracy. If the TVA experiment as administered thus helps to solve some of the problems raised by the flight of authority to the center and the isolation of the citizen from his government, history may quite possibly record that as TVA's greatest contribution to national well-being and the strengthening of democracy.

In line with the foregoing views Mr. Lilienthal sets definite limits to the expansion of the TVA itself. He believes that the full potentialities of a unified approach to resource development will not be realized if the regional

agency covers too large a region. In his judgment the present TVA region should not be enlarged substantially. It would be logical to bring the Cumberland River within the TVA, and there should perhaps be some extension of electricity beyond the area now served, but any substantial enlargement of the territorial scope of the TVA would impair its effectiveness and tend to produce the very evils of remoteness which the Authority is endeavoring to remedy.

This is a refreshing book by virtue of the optimism, idealism, and yet common sense of the author. It is written on a very high plane, and the reviewer is grateful to the author for allaying some common doubts and fears, and for offering the hope, at least, of a better world in which the people under democratic methods will strive to bring the individual interest into harmony with the national interest.

ELIOT JONES

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Labor and Industrial Relations

Yearbook of American Labor. Vol. I. *War Labor Policies.* Edited by COLSTON E. WARNE, chairman. (New York: Philosophical Library. 1945. Pp. xvii, 655. $7.50.)

This symposium on war labor policies and events is published for the Institute of Labor Studies. The function of this institute, as explained in a short prefatory note, is to promote fruitful research by bringing to bear on the labor field "the best talent that is available, with all that implies of objective standards and sound scholarship."

A great number of qualified spokesmen have, indeed, been brought together to write this comprehensive record of contemporary labor developments. More than 35 teachers of economics and sociology, government and union officers, men of the labor press and other experts have contributed to the book. Almost every important recent development in labor economics and policies, labor law and social legislation, government price and wage control and rationing, industrial relations, the situation of minority and other special labor groups, national and international unionism, and related fields is discussed in the six parts of the work on Status of Labor, Labor and the Government, Case Studies of Organized Labor, Special Labor Groups, Wartime Union Policies, and International Relations of American Labor. The Introduction presents an analysis of the book and shows the correlations between pre-war and war developments. A Balance Sheet of Labor, 1944, winds up the discussion.

It is of course impossible to do justice to all of the thirty-two articles of the book in this short review. I believe that the strength of most of them lies in the fact that they not only discuss war developments proper, but also include short analyses of the basic problems involved and present recent developments with due regard to their pre-war origins. This technique offers the reader, especially the lay reader, an opportunity to judge recent events as steps in

gradual evolution. It will thus help him to understand developments which otherwise might seem enigmatical.

Some chapters of the book, as, for example, those on the union maintenance policy of the National War Labor Board, on wage stabilization, and on new problems in social security, deal with complex and highly controversial subjects in relatively few pages; but, owing to the concentrated and systematic manner of presentation, they contain a remarkable amount of information. The value of several contributions is enhanced by the fact that their authors are the persons who were entrusted by the government with the task of solving those problems which they discuss in their articles. By bringing together all the monographs in a single volume, a useful reference book has been created.

Since the book covers a considerable number of highly controversial subjects, the editors have been confronted with the problem of partiality. In explaining their attitude with respect to this problem, they state: "We have been most anxious to reduce the problem of bias to a minimum. We appreciate fully that areas of dispute exist and have sought to balance our presentation of the more controversial issues." The editors were not completely successful in this respect. It is quite obvious that some contributors have succumbed to the danger of giving their chapters, by omission or commission, a color best suited to serve their academic or their group's economic interest, rather than to present a perfectly objective picture before drawing conclusions.

The editors have invited a critical appraisal from all readers "of this first somewhat experimental volume." Here is this reader's suggestion:

According to the Preface, the editors wished to publish a book that will prove an aid to unions in analyzing, interpreting, and appraising existing labor policies; that will be useful for those in government and in business life; that will serve the student of labor as a ready reference volume; and that will prove a valuable adjunct to college courses in industrial relations. The value of the book for all these objectives will be increased if in future editions any partiality is suppressed, and if, for this purpose, contributors are selected who represent a greater variety of ideologies than the present participants do. This statement does not in the least reflect upon the present contributors' philosophies or affiliations. But it is believed impossible to judge contemporary labor developments "with all that implies of objective standards and sound scholarship" unless qualified spokesmen of *all* groups concerned with labor policies and industrial relations are given the opportunity of presenting their reports and interpretations. In order to appraise existing labor policy, enlightened union and government officers, business men, students of labor problems, and certainly teachers of labor economics and industrial relations, need as comprehensive a survey as possible of *different* views. In the editors' Preface the wish is expressed to make future editions of the Yearbook "even more valuable to its users." Consideration of the foregoing suggestion could help to make that wish come true.

KURT BRAUN

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Social Insurance; Relief; Pensions; Public Welfare

In the Margins of Chaos; Recollections of Relief Work in and Between Three Wars. By FRANCESCA M. WILSON. (New York: Macmillan. 1945. Pp. xii, 313, $3.00.)

Francesca Wilson, a British school teacher, has spent a good deal of the last thirty years in foreign service. The plight of refugee Belgians whom she had first met seeking refuge in England, took her to Holland and France in 1915 and 1916. As a member of a small British Friends Unit she followed her brother, also a relief worker, to Corsica where the Serbian Relief Fund tried to make life a little more bearable for exiled Serbs. The same kind of work soon took her to North Africa and eventually to Serbia, together with the early groups of repatriates. Again a devastated country, widespread misery, lack of all desirable services, challenged her ingenuity and with utmost patience various emergency services were gradually developed for children and adults, for the homeless and for the sick, for disabled veterans and for all kinds of people who were simply disorganized, half-hearted and crushed by continuous suffering.

While in Serbia Miss Wilson heard of starving Vienna, and decided to look into Friends work in Vienna on her way to England. A chance visit developed into three years of service in Austria, mostly offering aid to groups of students and professors and other members of a middle class caught in the grinding poverty of superinflation. Hers was humble and unspectacular work, expression of a common brotherhood and of an eagerness to share experiences and the rather scanty goods at the disposal of international relief workers. In September, 1922, she transferred from Vienna to famine relief in Soviet Russia, assigned to an outpost in the Buzuluk region, where she and a young English girl were in charge of food distribution for an area including sixty villages or hamlets. The relief workers lived in a log cabin with Russian peasants, visiting local committees, families and most depressing children's orphanages full of listless, sickly, ragged children.

In 1937 the Spanish War, especially the misery of the children, haunted Francesca Wilson and again she took leave from her school, joining a very small group of courageous relief workers. She was just in time to share the nightmare of crowds of wild-eyed refugees fleeing from Malaga before it fell to Franco's Italian Army. Again services were improvised, hospitals for children, occupational centers, open air schools for dealing with the hoards of refugee children, even farm colonies where food was raised. Soon the mass of Spanish refugees pushed into France, half a million or more after the surrender. Francesca Wilson followed them into the bleak internment camps where she tried to bring a little cheer, a little food, some textiles and sewing utensils, at a time when the world was paying scant attention to individual misery even if it appeared *en masse*.

The German invasion of Poland and the simultaneous entry of Russian troops from the east produced another stream of forlorn bands of refugees, this time Poles moving into Rumania and Hungary, into chaos. An urgent call of the Polish Relief Fund coöperating with the British Friends took Francesca

Wilson to Hungary with a relief unit of six, distributing clothing and other relief, including British government contributions. After the fall of Poland, Hungary had become the only route of escape for the Czechs and for the earlier victims of nazi persecution who had found temporary refuge in Czechoslovakia. However, increasing German pressure and the imminent entry of Italy into the war quickly terminated that phase of her work.

Francesca Wilson's simple and vivid account of her many colorful activities and experiences is completely unassuming and unembellished; plain statements of an eye-witness with a warm heart and pretty sharp eyes who above all likes people and wants to share her strength but who has few illusions as to the adequacy of the services of which she has been such a vital part. "Thinking over relief work in the middle of a new chaos, with the old situations back again, magnified and multiplied and a thousand times more hideous, is not an encouraging task. What does it appear in retrospect but lost endeavor, an ever-repeated sweeping up the sands with vaster deserts in front?" Most of the services which she has so ably helped to organize have left little behind which may live after the emergency is over except where they have helped to train nationals or supported local social services in their periods of greatest strain rather than trying to supplant them. Miss Wilson thinks that the most lasting and deepest value of foreign relief as she has known it relates to its capacity for expressing international friendship, sometimes furnishing more effective ambassadors than those appointed by governments for official functions. If they are not hedged around with pomp and officialdom "careful whom they know and what they see and say, but live and work and suffer and hope with ordinary people, relief workers as ambassadors may be immeasurably important."

Miss Wilson has no special brief for the voluntary relief organizations under present conditions. We have at last become planning-minded and conditions after this war have no parallel since the Thirty Years War in their overwhelming scale of needs. Voluntary services should offer assistance and supplementation to intergovernmental services, but the existence of an official super-state body in charge of relief, the United Nations Relief and Rehabilitation Administration, is recognized as "an advance of incalculable importance."

HERTHA KRAUS

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American Medical Practice, in the Perspectives of a Century. By BERNHARD J. STERN. (New York: Commonwealth Fund. 1945. Pp. xvi, 156. $1.50.)

This publication is the first of a series of monographs to be written at the request of a committee on medicine and the changing order of the New York Academy of Medicine. The monographs are designed to provide the framework for an understanding of the current medical situation and its needs. It is stated in the Foreword that the monographs are expected to draw from history something of the framework of an understanding of medical problems of today. The committee, however, desires not merely a chronology of events, but rather a treatment of the subject matter which will bring to light the

achievements and the inadequacies in present-day medical practice—the uneven development of its different sectors, the prevailing incongruities and irrationalities, as well as the lag in the adjustment of medicine to the social needs of today.

Dr. Stern has written a monograph which follows closely the pattern set by the committee. He has drawn upon a large number of studies previously published and has presented in readable form many of the significant details from much of the important source material. The monograph will be enlightening and useful to the medical profession and to all other professional and lay groups who are interested in the provision of a high quality of curative and preventive service to all people, whether they belong to low or high income groups.

Although the monograph is divided into seven chapters, actually the discussion falls into three groups. Chapter I gives a bird's eye view of the economic history of the United States. The conclusion drawn from the data presented in this chapter may best be stated in the words of the author: "In the face of the vast increase in national income and of consumers' goods, a situation has developed in which a large segment of the people of the United States have incomes that do not permit them to share fully in these social gains."

In Chapters II to VI the development, changes, and problems of medical practice since the Civil War are discussed. In Chapter II the growth of the science of medicine is reviewed. In Chapter III the author explains the reasons for the development of the specialist in medical practice and points out some of the problems from the point of view of both the physician and the patient. In Chapter IV the author presents data as to the supply and the distribution of physicians with particular emphasis on the shortage of physicians in the low income sections of the country, the rural areas and the small communities which are not able to assure adequate incomes to physicians and to finance hospital services.

In Chapter V there is set forth available data on the patient load of the physician. The author states that patient load furnishes an index of the adequacy of the supply of physicians in terms of the use of these services. Dr. Stern correctly emphasizes, however, that it does not provide an index of need for medical services. Whether or not illnesses actually receive care is to a large extent dependent upon the ability to pay for medical care and the choice between spending money for a doctor or for something else the family may need or want. Chapter VI is a digest of the available information as to incomes of physicians. The conclusion drawn is that under the present arrangements of medical organization many physicians are insecure financially. The reader's attention is, however, drawn to the fact that, although an adequate income for the physician is important as a factor in his ability to keep up with advances in medical science and to utilize new medical technology, an improvement in the financial status of the physician will not alone solve the problems of the quality of medical care.

Chapter VII, the final chapter, deals with the problems of the consumer of medical services, and his difficulties in financing present standards of medical care in communities where such care is obtainable. The details in this chapter

will be highly enlightening to students of the problem and possibly shocking to those who may have been lulled into complacency by the general impression that we are a rich country with a highly developed medical science. A vast array of statistical data supports the author's conclusions that the medical needs of a considerable proportion of American families are not fully met. The amounts spent for medical care decline consistently as incomes drop. Yet mortality and morbidity statistics indicate that the need for medical care among lower income groups is greater than among higher income groups. The author's conclusion is that the chief problem of medical practice today is how a high quality of curative and preventive medical services can be made available to all people, whether they belong to low or high income groups, whether they be rural or urban residents, Negro or white.

It is disappointing that the author, having so carefully analyzed a vast amount of data regarding the economic inability of large numbers of our population to secure adequate medical care, did not go one step further and suggest a solution to this problem. It would appear to the writer of this review that the impressive array of data presented by Dr. Stern would inevitably lead to the conclusion that the use of the insurance principle, the distribution of the cost over large groups, must be adopted if adequate medical care is to be made available to rich and poor. Dr. Stern's own conclusions from his data might, however, differ from mine; and it is almost certain that the monograph will leave many with the question as to what would be his recommendation for making available to all the best known practice in preventive and curative medicine.

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Population; Migration; Vital Statistics

Demographic Studies of Selected Areas of Rapid Growth. Proceedings of the Round Table on Population Problems; Twenty-second Annual Conference of the Milbank Memorial Fund, April, 1944. (New York: Milbank Memorial Fund. 1944. Pp. iv, 158. $1.00.)

These studies, here collected under one cover as an "afterthought," are in the nature of preliminary or interim statements of the results of demographic analyses carried on by members of the staff of the Office of Population Research, Princeton University. The areas selected are Japan, India, Southeastern Europe, the Near East, and Egypt. No study of China is included although it comes in for incidental comment, as does Puerto Rico at the very end of the volume. The studies vary in method and content, some confined to straight statistical analysis, others—recognizing that the population problem involves both demographic and non-demographic factors—going into economic, technological, political, and cultural influences and venturing generalizations as to policies. Notable for this wider range of analysis are "The dynamics

of population in Japan," by Irene B. Taeuber and Edwin G. Beal, "Demographic fact and policy in India," by Kingsley Davis, and the final chapter, "Problems of policy in relation to areas of heavy population pressure," by Frank W. Notestein.

This reviewer early in 1945, ventured to call to the attention of economists the great import of the population problem in these areas to the future of international relations. The present studies, together with the more popular *Population Roads to Peace and War*, by Burch and Pendell,[1] are significant indication that others are aware of the dangers inherent in the rapid increase, actual and potential, in already overpopulated but industrially undeveloped countries like India and China. There is, of course, nothing wholly novel in this recognition. It was expressed many years ago, somewhat sensationally, by Lothrop Stoddard, and popularly in Warren S. Thompson's *Danger Spots* and E. A. Ross's *Standing Room Only*. Ross in particular called attention to the effect which the importation of Western industrialism and culture into the Orient would have in reducing mortality long before an appreciable reduction of fertility could be expected, and the consequent increased pressure of population on resources—an idea central to the present studies.

These studies are refreshing evidence that American demographers are emerging from the sheer technician stage to a larger range of interest and a broader grasp of substantive problems. It has been characteristic of population research in recent decades that immediate and relatively local problems got attention, while immensely more important ones—for the long run at least—have been neglected. Economists lost interest in population problems. First the biologists and then the sociologists took over. Together with a new and highly trained crop of vital statisticians, they now dominate the Population Association of America. Interests have centered on the development of more refined techniques of demographic analysis, and especially on studies of differential fertility. Evidence of this absorption—not to say obsession—is afforded by many of the publications of the Milbank Memorial Fund as well as by Lorimer's excellent book, *The Dynamics of Population*. But studies of the international aspects of the fundamentally economic population-resources relation have been conspicuous by their absence. The latest text—a good one within its limited range—Landis's *Population Problems, a Cultural Interpretation*, deals not at all with the economics of population and is hardly aware that population presents any international problems or issues.

In the West, after a century in which rapid population growth was correlated with industrialization and urbanization, decline in fertility has overtaken decline in mortality. Can today's undeveloped regions support the greatly increased numbers which will result from industrialization long enough for birth control to be established in their culture, or will the lag of birth control behind death control produce a catastrophic situation? That is the question which the contributors of these studies have in mind. In this regard, Notestein's observations in the final chapter are extremely cogent. Special mention should

[1] Washington, Population Reference Bureau, 1945.

also be made of the article on Egypt by Wendell Cleland of the American University at Cairo.

A. B. Wolfe

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Unclassified Items

The Philosophy of Edward Bellamy. By Arthur E. Morgan. (New York: King's Crown Press. 1946. Pp. vii, 96. $1.60.)

Some years ago Dr. Arthur E. Morgan, noted engineer, educator and public administrator, undertook the fascinating task of studying the life and works of the great utopian writer, Edward Bellamy. When he began this task, he took it for granted that Bellamy's interests had been only those of social reform and utopian adventuring.

An examination of Bellamy's unpublished writings, however, soon disclosed the fact that the author's work in the field of social reform had been only a "detour," and that Bellamy's first intellectual contributions had been largely in the field of philosophy. In fact, for some fifteen years prior to the publication of *Looking Backward* and its wide acclaim by the reading public, Bellamy had thought deeply and written constantly on philosophic problems. And he would doubtless have dedicated many more years to the formulation of his philosophic concepts had it not been for the great and unexpected success of his utopian writings. In 1893, after the publication of *Looking Backward,* he wrote to Dean Howells: "The responsibility upon us who have won the ear of the public to plead the cause of the voiceless masses, is beyond limit . . . the better a man does the better he has got to do. There is no discharge in that war."

Bellamy hoped that, when his social and political obligations had been fulfilled, he would be able to return to his first love, further to define his philosophic views and to present them to the public in orderly fashion. It was, in fact, his belief that the exposition of his philosophic views would constitute the greatest work of his life. This, however, was not to be. Bellamy for years suffered from ill health, and died at the early age of 49, when he was still devoting much of his time to the cause of socialism and social reform.

Dr. Morgan has painstakingly gathered together the more important of Bellamy's non-economic writings, under the title, *The Philosophy of Edward Bellamy,* and has published them in a short volume. Commenting on these writings, Bellamy's biographer declares that they disclose "one of those rare original minds which has the skill and power to get outside the framework of our thinking and to view man and his setting as would a fresh mind from another sphere."

Dr. Morgan first presents "The Religion of Solidarity" by Bellamy, written when the latter was only 24 years of age, as the best single expression now extant of the American utopian's general concept of life, of mankind's relation

to the whole, and of the nature of things. In this essay, Bellamy sees a duality in life: an individual, personal, private life, and a life "that is a spark of the universal life . . . greedy of infinity, asserting solidarity with all things and all existence." The essay shows that Bellamy had been considerably influenced by Thoreau and Emerson and by the Hindu philosophy which had had its effect on the Concord School.

Following "The Religion of Solidarity," Dr. Morgan presents from Bellamy's articles, scattered notes and fictional writings, the utopian's pioneering thinking on the fears that beset mankind, and sets forth Bellamy's suggestions for the elimination of many of these fears. The latter part of the book deals with Bellamy's approach to an economy of happiness, and to the religious teachings of his day.

Bellamy's philosophic writings throughout reveal a man interested not only in fundamental economic change, but also in the whole range of psychological, ethical, philosophical and religious problems with which mankind is faced and with ways and means of bringing unity and consistency in thought and action into his own life and into the lives of his fellows. They reveal a man of penetrating mind, of high ethical concepts, of imagination and intellectual courage. Students of Edward Bellamy and his school of utopian thought are deeply indebted to Dr. Morgan for his painstaking, scholarly and sympathetic study of this little known phase of Bellamy's life and for bringing to public attention Bellamy's thought-provoking contributions in these fields.

HARRY W. LAIDLER

League for Industrial Democracy

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CRONIN, J. F. *Economic analysis and problems.* (New York: Am. Book Co. 1945. Pp. xv, 623. $3.75.)

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Edwin Walter Kemmerer

1875-1945

Edwin Walter Kemmerer, past-president of the American Economic Association, died in Princeton, New Jersey, on December 16, 1945. He had been a member of the Association since 1903, had served from 1907 to 1910 as Managing Editor of the *Economic Bulletin* (predecessor journal of the *American Economic Review*) and was on the Board of Editors of the *Review* from 1911 to 1913. He was elected to the presidency of the Association for 1926.

Born in Scranton, Pennsylvania, on June 29, 1875, to Lorenzo D. and Martha H. Courtright Kemmerer, the future "Money Doctor" prepared for college at Keystone Academy, Factoryville, Pennsylvania, and then attended Wesleyan University where he received his A.B. degree, with honors and a Phi Beta Kappa key, in 1899. From Wesleyan he went on to Cornell University to pursue his studies for the doctorate. After two years in residence there, as a Fellow in Economics and Finance, he took his first teaching position as instructor in Economics and History at Purdue University. In 1903 he received his Ph.D. degree from Cornell, submitting a thesis entitled *Money and Credit Instruments in their Relation to General Prices.* This pioneering study in quantitative economics (presently brought out in book form) established the author as a rising authority in the field of money and led to his appointment, at 28, as Financial Adviser to the United States Philippine Commission. This was the beginning of a career in the application of economic doctrine to public affairs which, in geographical range as in other respects, has few if any parallels. He remained in the Far East till 1906 and, in his three years there, developed in detail the plan under which the monetary system of the Philippines was placed on the gold exchange standard, drafted the laws for the organization of the postal savings system and the Agricultural Bank of the Islands, and served as Chief of the Division of the Currency. *En route* to study the Agricultural Bank of Egypt, he visited the Straits Settlements and prepared a special report on their currency situation.

Returning to this country in 1906, he joined the faculty of Cornell University as assistant professor. Six years later, after attaining full rank at Cornell, he moved to Princeton University where he spent the remainder of his academic life. In 1928 he was made director of the newly established International Finance Section at Princeton and was the first incumbent of the specially endowed Walker professorship in international finance. He retired from active service in 1943.

Professor Kemmerer's long term at Princeton was marked by frequent calls to public service, in many countries, in the restoration of sick currency systems. His successful therapy led to the sobriquet "Money Doctor" by which he was internationally known. His work as financial adviser to foreign countries began in 1917 on his appointment, in that capacity, to the government of Mexico. It was continued in 1919 for the government of Guatemala. The

results attained in each successive project led to a cumulative enhancement of his prestige and of the demand for his services. Furthermore, there tended to be a broadening of the base of operations and an enlargement of the field of activity. Currency reforms can not be isolated from such problems as those relating to public budgets, systems of taxation, systems of banking, conditions in the markets for foreign exchange, the service of the public debt owned abroad. It therefore soon came to be Professor Kemmerer's practice, as his advisory services were requisitioned, to form a group or commission of experts, each member an outstanding specialist in his field. Such commissions were formed to serve Colombia in 1923 and 1930, Chile in 1925, Poland in 1926, Ecuador in 1926-1927, Bolivia in 1927, China in 1929, and Peru in 1931. In two cases Professor Kemmerer shared with another the leadership of such a commission. In 1924-1925 he was associated with Dr. Vissering, president of the Netherlands Bank, at the head of a commission formed at the request of the government of the Union of South Africa. Their task was to investigate and report upon the feasibility of a return to the gold standard by that government independently of the currency policy of Great Britain. Finally, in 1934, he was co-chairman of the so-called Hines-Kemmerer Commission established to make an economic survey of Turkey.

In 1922 Professor Kemmerer served as a United States Trade Commissioner in South America. In 1924-1925 he accompanied the Dawes Commission to Europe. As the Commission's Expert on Currency and Banking he drafted substantial parts of the plans then made for the reorganization of the German Reichsbank and for the stabilization of German currency.

This record of accomplishment in the field of public affairs brought Professor Kemmerer many honors. He was the recipient of seven honorary degrees. The degree of Doctor of Commercial Science of Oglethorpe University was conferred on him in 1933; that of Doctor of Science of Rutgers University, also in 1933. Three institutions gave him the honorary degree of Doctor of Laws: Wesleyan University in 1926; Occidental College in 1928; and Columbia University in 1935. In 1927 Professor Kemmerer received from the Central University of Ecuador and also from all the universities of Bolivia acting together an honorary degree of "Doctor," no field of knowledge being specified. Professor Kemmerer was the second person in the history of the Central University of Ecuador to be so designated.

As to non-academic honors and awards, Professor Kemmerer received in 1923 from the government of Colombia a special gold medal; from the government of Poland in 1926 the Commander's Star of the Order of Polonia Restituta; from the government of Ecuador in 1927 the Order of Merit of the First Class; and from the government of Belgium in 1937 the Order of the Crown.

Professor Kemmerer's excursions into public affairs did not preclude prolific literary activities and some of his books, such as the *A B C of the Federal Reserve System,* had an enormous vogue. He was an uncompromising protagonist of the gold standard and most of his later work, though broad in scope, was devoted to a defense of that system. His *Modern Currency*

Reforms, an analysis and description of certain gold exchange standard currencies, is of unique historical value and will, perhaps, outlive all the rest of his writings.

Professor Kemmerer's literary style was remarkable for its lucid simplicity and the same quality marked his oral exposition. Without the slightest display of ornamentation, except by charts, his lectures and preceptorial discussions were extraordinarily effective, and he left a deep impress on his students.

As a man he was singularly genial and unassuming. His strong convictions were always considerately expressed and he never suffered doctrinal differences to cloud his personal regard for his opponents. On many of his missions he was exuberantly lauded by those in high office but he himself never lost his simple charm. His disciples were legion and they will sorely miss him but, however highly his friends may rate him as a scholar, they will hold still more dearly the memory of the gentleman.

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The American Library Association has published a volume, *Books Published in the United States, 1939-1943: A Selection for Reference Libraries,* prepared by the Committee on Aid to Libraries in War Areas. It includes a select list on economics and sociology. Though this is considerably less comprehensive than the list prepared for this purpose, this reference was made in a note in the *American Economic Review* for March, 1945.

Income from the Permanent Science Fund is disbursed by the American Academy of Arts and Sciences in support of scientific research in the fields of mathematics, physics, chemistry, astronomy, geology, geography, zoölogy, botany, anthropology, psychology, sociology and economics, history and philology, engineering, medicine, surgery, agriculture, manufacture and commerce, education, or any other science of any nature or description. Applications for Grants-in-Aid are receivable on forms which will be supplied upon request to the chairman of the committee, and are considered by the Permanent Science Fund Committee of the Academy on March 1 and October 1. Communications should be addressed to John W. M. Bunker, Chairman, Permanent Science Fund Committee, Massachusetts Institute of Technology, Cambridge, Mass.

The *Smith College Studies in History* have completed thirty years of continuous publication. In their entirety, the studies cover a wide range of historical scholarship. Special emphasis has been given to "regional" history and ten volumes have appeared on the social and economic development of the Connecticut Valley. Complete lists of the fifty-five works so far published will be sent upon request by the Smith College Library, Northampton, Mass. Orders for copies or requests for exchange should also be addressed to the Smith College Library.

Appointments and Resignations

Edward D. Allen, associate professor of public finance at Iowa State College, is engaged in a research study for the Iowa Post-war Taxation Study Committee.

Paul H. Anderson is now economic analyst with the War Assets Corporations, Reconstruction Finance Corporation, Washington, D.C., and is also teaching mathematics in the evening school of American University.

C. P. Anson is currently serving as acting associate professor of economics at the University of North Carolina following his resignation as price executive with the Office of Price Administration.

Henry H. Bakken, associate professor of agricultural economics at the University of Wisconsin, resumed his teaching and research duties in January, after having been on leave of absence during the past two and a half years in government service.

Claude D. Baldwin has joined the staff at Indiana University as assistant professor of economics.

Robert B. Bangs has resigned as assistant professor at Indiana University and accepted a position with the Department of Commerce in Washington, D.C.

Russell S. Bauder who has been on leave, serving as vice chairman of the National War Labor Board, Region VII, Kansas City, Missouri, has resumed his duties as professor of economics at the University of Missouri.

Eric Beecroft was appointed special assistant to the Secretary of the Interior following his return from India where he served as special representative of the Foreign Economic Administration and special agent of the United States Commercial Company.

Lawrence Bell has been appointed a teaching fellow in the department of economics at Harvard University for the spring term.

Rollin F. Bennett has resumed his teaching in the School of Business of Columbia University after three years' absence while engaged in war work.

George E. Bigge of the Social Security Board and a lecturer in social security problems at the Graduate School of Social Science, the Catholic University of America, is now attached to the American Military Government in Germany.

Jay W. Blum of the department of economics of Kenyon College served as a lecturer in economics at the Ohio State University during the winter quarter of 1946.

Francis M. Boddy, associate professor of economics at the University of Minnesota, has returned from active duty in the United States Naval Reserve and has resumed his regular post.

Brandt Bonner, formerly of Furman University, has been appointed associate professor of economics at the University of Florida.

Daniel Borth has resigned as professor of accounting and auditor of Louisiana State University.

Samuel E. Braden has resumed his duties as assistant professor at Indiana University after serving for some time with the Statistical Control Division of the Army Air Forces.

Paul A. Brinker has been appointed an instructor in the department of economics at the University of Vermont.

D. H. Buchanan, who has been on leave with the Department of State, has returned to his duties as professor of economics at the University of North Carolina.

Eveline M. Burns has been appointed part-time lecturer in social economy for the second semester at Bryn Mawr College and will give a graduate seminar in social research.

James D. Calderwood has returned to his work as an instructor in economics at the Ohio State University after service in the Army.

C. E. Calhoun, formerly of the faculty of the University of Toledo, has been appointed professor of finance in the College of Business and Public Administration of the University of Maryland.

Wesley G. Campbell has been appointed a teaching fellow in the department of economics at Harvard University for the spring term.

William A. Carter was appointed chairman of the department of economics at Dartmouth College in July.

James E. Chace has been appointed acting head professor in charge of real estate courses at the University of Florida.

Frank E. Childs, instructor in economics at the University of Minnesota, has returned to his teaching duties following three years of service in the United States Naval Reserve.

C. Wilbur Cissel has returned to the faculty of the College of Business and Public Administration, University of Maryland, as associate professor of accounting following his release from the Navy with the rank of Lieutenant Commander.

Arthur Claydon, formerly acting head of the department and professor of economics at Earlham College, is at present teaching economics at Syracuse University.

Thomas J. Clifford, recently returned after service with the Armed Forces, has been appointed instructor in accounting in the School of Commerce, University of North Dakota.

Richard M. Colwell has resumed his duties as instructor in economics at the Massachusetts State College, after three years' service as a Captain in the Army.

Arthur G. Coons, professor of economics and dean of Occidental College, has been elected president of the college and will take office at the end of the present academic year.

C. Sidney Cottle, formerly a Commander in the United States Naval Reserve, has been appointed associate professor of business administration at Emory University.

Lawrence A. Cusack, formerly of Creighton University, is now teaching in the Graduate School of Social Science of the Catholic University of America.

Ralph Currier Davis has resumed his work as professor of management at the Ohio State University after serving in the Army for three years as a Lieutenant Colonel in the materials control division of the Air Corps.

Lawrence S. Dreiman has recently been discharged from the Army and is now an instructor in economics at the University of Minnesota.

John F. Due has returned to his duties at the School of Business, University of Utah, after three years' service as an officer in the Marine Corps.

William M. Duffus has returned to his position as professor of finance and transportation at the Ohio State University after some years of service with the United States Tariff Commission in Washington.

W: J. Eiteman, associate professor of economics at Duke University, who has been on leave of absence teaching in the Army University in France, will resume his duties in March.

Boris Emmet, formerly vice president of Sears, Roebuck and Company and professor of economics at Stanford University, has been appointed research associate in the School of Business of the University of Chicago to conduct a study of the history of Sears, Roebuck and Company under a grant from the Rockefeller Foundation.

A. Ross Evans, formerly with Haskins and Sells and civilian accountant attached to the United States Navy, has been appointed associate professor of accounting at the University of Florida.

Elden Facer of the School of Business at the University of Utah is at present on leave of absence.

Mildred Fairchild, director of the Carola Woerishoffer graduate department of social economy at Bryn Mawr College, has resigned to join the International Labor Office, Montreal, where she is working with the section on women's work and the protection of youth.

John T. Farley, formerly economist with the War Production Board and the Office of Price Administration and instructor in economics and finance at Duquesne University, has accepted a position in the market research division of the General Electric Company, Schenectady.

Ivan Farmer is now instructor in accounting at the University of Kansas.

George Filipetti, professor of business administration at the University of Minnesota, has returned to his regular post following six months' service at the Biarritz Army University Center.

Ernest M. Fisher has resigned his position with the American Bankers Association to become professor of urban land economics in the School of Business of Columbia University.

J. Wesley Fly, formerly associate professor of accounting at the University of Florida, has resigned and is now associated with Pribble and Wells in Orlando.

Robert W. French has resigned as associate professor of business administration and assistant director of the Bureau of Business Research at Louisiana State University.

Joseph H. Furth, an economic adviser to the Board of Governors of the Federal Reserve System, is offering courses in mathematical economics and advanced economic theory in the Graduate School of Social Science of the Catholic University of America.

Domenico Gagliardo has resumed his position as professor of economics at the University of Kansas after serving as a Major in the Quartermaster Corps of the Army.

Eli Ginzberg, who has served as a special assistant to the Surgeon General, will resume his teaching in the School of Business of Columbia University this spring.

John H. Goff, formerly professor of economics at Alabama Polytechnic Institute, has been appointed professor of business administration at the School of Business Administration of Emory University.

R. A. Gordon, associate professor of economics, returned to the University of California for the fall term, having been on leave of absence from January, 1942, to serve as American coördinator of research on the Combined Raw Materials Board, Washington.

William F. Moshier has been appointed assistant professor of accounting at the University of Florida.

Sanford A. Mosk, assistant professor of economics at the University of California, was granted leave of absence to teach Latin American economics in the Miltary Attaché Program at the University of Michigan, with the title of visiting associate professor in economics.

George N. Motte, formerly a Captain in the Army Quartermaster Corps in Washington, has returned to his position as assistant professor of economics at Michigan State College.

Frank Munk, formerly director of training of the United Nations Relief and Rehabilitation Administration, has been appointed chief economic adviser to the UNRRA mission in Czechoslovakia.

Alfred C. Neal, who has been on leave of absence to serve in the Office of Price Administration, has resigned his position as assistant professor of economics at Brown University and will become director of research at the Federal Reserve Bank of Boston.

John A. Nordin has returned after service with the Armed Forces and taken up his position as assistant professor of economics at Iowa State College.

Howard M. Norton has returned to his position as head of the secretarial science department at Louisiana State University after a leave of absence during which he taught at the American University in Shrivenham, England.

H. M. Oliver is now serving as acting associate professor of economics at the University of North Carolina.

John E. Orchard, who has been on leave in government service since 1941, has resumed his teaching in the School of Business of Columbia University.

Jacob Perlman of the Social Security Board is offering a course in labor market analysis in the Graduate School of Social Science of the Catholic University of America.

Kenyon E. Poole, who is returning to Brown University after service in the Navy, has been promoted to associate professor of economics.

Earl P. Powers has been promoted to associate professor of accounting at the University of Florida following his return after service with the Army.

J. H. Reid, who served as acting dean of men during the war period, has resumed his position as associate professor of marketing in the College of Business and Public Administration of the University of Maryland.

Rita Ricardo has been appointed a teaching fellow in the department of economics at Radcliffe College.

Ross Robertson, who has been a Lieutenant in the Navy's Bureau of Supply and Accounts, has returned to the University of Kansas as instructor in economics.

Arthur M. Ross, previously vice chairman of the War Shipping Panel of the National War Labor Board in Washington, has been appointed lecturer in economics at Michigan State College.

Richard Ruggles has been appointed instructor in the department of economics at Harvard University for the spring term.

Laurence de Rycke has been promoted to assistant professor of economics at Occidental College.

Alfred L. Seelye, who has been price economist with the Office of Price Administration regional office at Dallas, Texas, has rejoined the faculty of the University of Kansas as assistant professor of marketing.

Robert T. Segrest, associate professor of economics and assistant Dean of the College of Business Administration, University of Georgia, returned in January after serving as Wage Stabilization Director and later as vice chairman of the Fourth Regional War Labor Board in Atlanta. He is now part-time public member of the Regional Wage Stabilization Board in Atlanta.

Clarence Senior, formerly chief foreign economic specialist in the Bureau of Areas of the Foreign Economic Administration, has been appointed visiting professor of social science

and acting director of the Social Science Research Center at the University of Puerto Rico. In addition, he will make a study of the land distribution program.

William H. Shannon, who recently served as a Commander in the Bureau of Supply and Accounts of the Navy, has resumed his position as associate professor of accounting at the University of Kansas.

Edward S. Shaw has returned to Stanford University as professor of economics after a leave of absence of three years, serving with the Office of Price Administration and later as a Supply Officer in the Navy.

James H. Shoemaker, who has been on leave of absence from Brown University to serve with the Military Government Division of the Army, has resigned his position as assistant professor of economics to become professor of economics at the University of Hawaii.

Joe Small has been appointed instructor in accounting at the University of Kansas.

Hampton K. Snell has, since May, 1945, been on leave of absence as one of the assistant directors of research for the Industrial College of the Armed Forces to serve as assistant to the vice president of research of the Association of American Railroads.

Henry W. Spiegel of the Graduate School of Social Science of the Catholic University of America, has been granted a leave of absence during the second semester to engage in research work in Brazil, following his receiving a fellowship awarded by the Guggenheim Memorial Foundation.

J. Y. Springer, assistant professor of economics at Duke University who has been on leave of absence serving as a Lieutenant Commander in the Navy, resumed his teaching duties in March.

William A. Spurr, formerly of the University of Nebraska, has been appointed associate professor of statistics in the School of Business of the University of Chicago.

R. L. Stallings has been released from the Navy and has returned to the University of North Carolina as instructor in accounting.

Harry Sundwall of the School of Business at the University of Utah is at present on leave of absence.

Victor P. Tabaka, formerly personnel manager of Bell Aircraft Corporation's Georgia Division, has been appointed associate professor of business administration at Emory University.

Lorie Tarshis has been appointed assistant professor in the department of economics at Tufts College for the year 1945-46.

James Tobin has been appointed a teaching fellow in the department of economics at Harvard University for the spring term.

John V. Van Sickle, professor of economics at Vanderbilt University, has been appointed research professor of economics in the University's Institute of Research and Training in the Social Sciences.

Dilworth Walker of the School of Business of the University of Utah is on partial leave of absence while acting as consultant and director of research of the Utah State Legislature's Tax Study Committee.

Charles J. Walsh has resumed his teaching duties as assistant professor of economics at the Graduate School of Arts and Sciences, Fordham University, after serving for eighteen months as head of the Office of Export-Import in the Office of Price Administration.

William C. Welden, formerly with the Department of Agriculture, is now associated with H. P. Hood and Sons, Boston, as economist.

Samuel G. Wennberg, who has been serving in the Office of the Director of the Economics Division, Office of Military Government for Germany, has returned to the University of Missouri and has resumed his teaching duties as associate professor of marketing.

John T. Wheeler is now an instructor in accounting and economics at the University of Minnesota following his discharge from the Army.

J. Brooke Willis has resumed his teaching in the School of Business of Columbia University after service in the Army.

Edwin E. Witte of the department of economics at the University of Wisconsin is resuming his teaching this semester after a three-year leave of absence spent as Regional Director of the War Labor Board in Detroit and as a public member of the National War Labor Board in Washington.

Herman J. Wyngarden, professor of economics and recently appointed head of the department of economics at Michigan State College, served for the past two and a half years as a public member of the Regional War Labor Board in Detroit.

Hugh Edwin Young, instructor in economics at the University of Maine, is on leave of absence during the year 1945-46.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies. The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief descriptions of vacancies announced and of applications made. It is optional with those submitting such announcements to publish name and address or to use a key number.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

The Department of Economics in an old, well-established state university will accept communications now from economists in the Armed Services or in emergency government agencies who might qualify for future staff positions. There are at present no vacancies but anticipated postwar expansion is expected to justify additions to staff over and above the return of senior members now on leave of absence. All applications will be carefully reviewed, acknowledged, and classified in an active file for future reference. P107

Business law: Wanted, two attorneys with graduate training in economics or business organization for assistant professorships. Midwest college of commerce. P108

Air transportation: Wanted, man with air transportation experience and graduate work needed by Midwest college of commerce. P109

Business correspondence: Wanted, man with graduate degree needed for full-time position, Midwest college of commerce. P110

Economic theory and its history: Wanted, by a large, well-established eastern university, an experienced teacher with Ph.D. degree. P111

Labor relations: Opening for fall semester, midwestern state university, September, 1946. Associate professor, Ph.D. Salary $3,500 for nine month with possibility of employment during the summer at additional salary. Man under 40 preferred. P112

Teachers Available

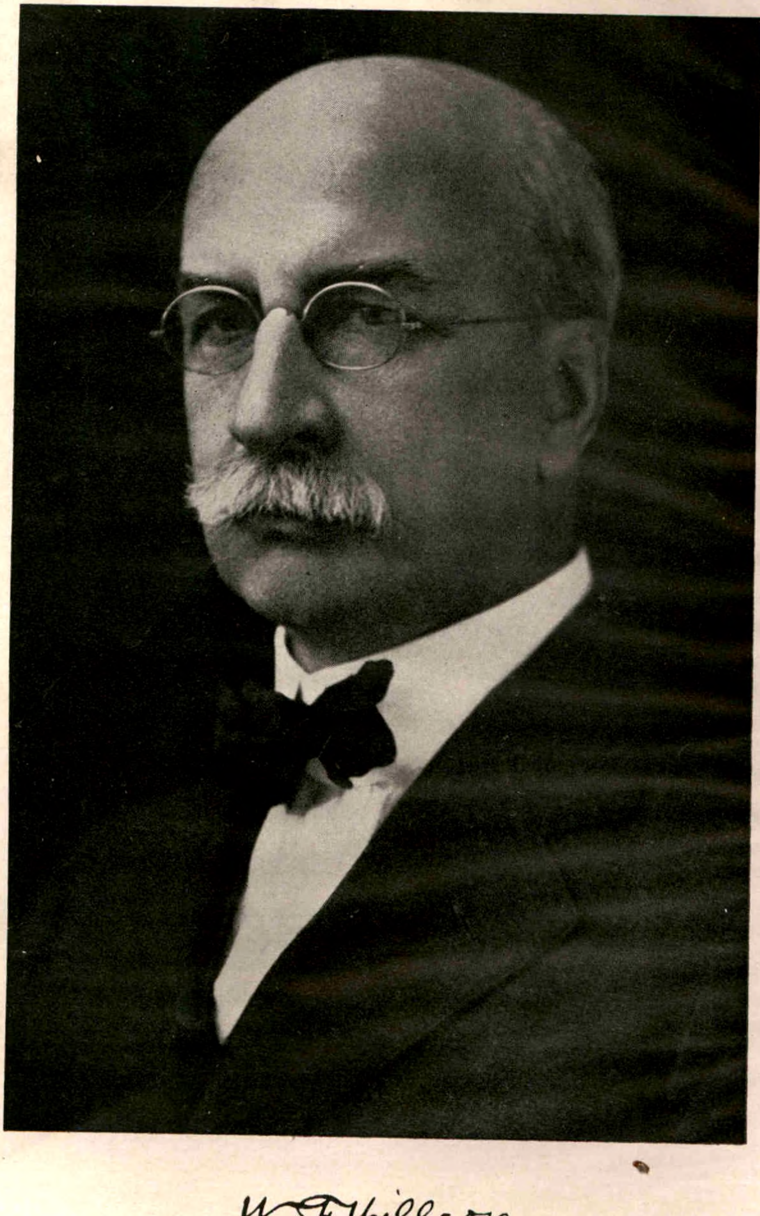
International economic relations, comparative economic system, government and business, national defense and war, research: Man, 41, married, European Ph.D. degree, American citizen. Wide experience in academic teaching and research; many publications. Now employed at Eastern college; desires position with greater opportunities. Available in May, 1946. E108

Labor economics, industrial management: Man, 44, Ph.D., 1931, University of Wisconsin. University teaching experience; research and general experience in business and government agencies. Lecturer in the evening session of a large college and director of education in a commercial organization; on leave to teach in Army University Studies Center, England. Available, February, 1946. E116

Money and banking, business cycles, international trade and finance, corporation finance, economic theory, statistics: Man, 43, married, Ph.D., Harvard. Seventeen years of experience teaching economics in American colleges; also experience in banking and government service; publications; employed as head of department in small college but desires position with greater academic opportunities. Available in July, 1946. E133

Economic and monetary theory, economics and philosophy, government and economics: Man, 35, Ph.D. Two years of study abroad; teaching experience. E153

Money and banking, corporation finance, investments, economic history: Man, Ph.D., Columbia University. Twenty years of banking experience; wishes teaching position. War veteran. Available for summer or fall term. E162



W. F. Willcox

No. 18 of a series of photographs of past presidents of the Association.

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OBSERVATIONS ON THE OPERATIONS OF THE NATIONAL WAR LABOR BOARD

By DEXTER MERRIAM KEEZER*

The following observations on the operations of the National War Labor Board deal both with its basic accomplishments in coping with labor disputes and stabilizing wages, and with some of the more striking manifestations of its behavior as a tripartite agency of government, with membership representing the public, organized labor and employers. That the issue of whether or not an agency designed to deal with labor disputes on behalf of the federal government should have a tripartite membership will continue to have vitality is suggested by the fact that, in passing the Labor Disputes act of 1946, popularly called the Case bill, the House of Representatives provided for the creation of a Labor-Management Mediation Board, with a three-way membership patterned on that of the War Labor Board.

Since my observations on the behavior of the National War Labor Board were made at close range, they tend to emphasize the pulling and pushing in which the conflicting elements composing its tripartite membership were more or less continuously engaged. This pressure performance, while more entertaining, was less important than the Board's basic accomplishment in carrying out its dual assignment to settle labor disputes and stabilize wages, and should be viewed accordingly.

Toward the end of a visit to the National War Labor Board, a friend of mine from England who had been privileged to attend a session of the Board and had been considerably shaken by the experience, inquired, "Was I being had on when I was told that your Board is just like the United States Supreme Court, that it makes decisions from which there is no appeal?" When I assured him that it made such decisions, he exclaimed, "Then I say! Why don't you behave like the United States Supreme Court?"

* The author is now director of the department of economics of McGraw-Hill Publishing Co., and wrote the present article while a Public Member of the National War Labor Board.

My friend had reference to the socially rugged manner in which the Board conducted its business. As I recall it, no threats of physical violence were visited on any of the members during the session he attended. In fact, in my experience as a Public member of the Board, which extended over a year and a half, it was only on very rare occasions that it was proposed to "Come outside and finish this!" But it was commonplace to have charges ranging from those of deceitfulness, venality, and vulgar avarice to the relatively mild accusation that one was being willfully and stubbornly obtuse tossed around the Board and accented by shouting and table pounding. It was even more commonplace to have several members of the Board talking at the same time, perhaps in a series of independent parleys cutting across the main thread of discussion.

Why the Board acted in this forthright fashion seemed to be accounted for in part by what have become almost the conventions of deportment in handling labor relations in the United States. These seem to call for a notably robust line of verbiage, compounded on readily found occasions with mutual abuse by the participants. However, unless the abuse is piled on to a depth and with a persistence that unmistakably indicates that it is sincere, it also seems to be conventional to take it and deliver it with a considerable degree of personal detachment. Indeed, it was not unusual for a member of the War Labor Board to characterize one of his colleagues as bountifully endowed with a large variety of despicable human qualities, and then add blandly, "Nothing personal of course."

A few years ago failure on my part to understand that a comprehensive cussing of each other by the parties to it may merely be a conventional manifestation of virility in handling a labor dispute, led me into a consequential error. At the time I was acting as referee for a division of the National Railroad Adjustment Board which, in addition to the referee, included five representatives of employers and five representatives of the workers. One of my colleagues, a great hulk of a man, kept threatening, it seemed to me very earnestly, to throw another of them out of the window, which happened to be twenty-two stories above the ground. I found this such an alarming prospect that I refused to continue the proceedings until I was spared the thought of having my associate hurtling through space to the pavement below. I had my way, but at the conclusion of my tour of duty as referee, the member to whose threats I had objected advertised me throughout the Northwest, where I was then living, as the most unfair man with whom it had ever been his misfortune to be associated. I am sure he was motivated in considerable part by a feeling that I had unreasonably cramped his style by refusing to permit him to present his case with

what he regarded as an appropriate degree of vigor. If I had had a tour of duty on the National War Labor Board at the time, I would have been more understanding.

A root cause of the two or more fisted character of the War Labor Board proceedings was, of course, the abiding fact that there are very few, if any, generally respected principles or standards to which to appeal in establishing wages and working conditions. Within the limits of paralyzing bankruptcy on one side and conditions which workers find intolerable on the other, there is a sort of scientific no man's land in which the general absence of controlling economic sign-posts encourages resort to bluster as a means of trying to prevail.

Use of this technique was also encouraged by the tripartite membership of the War Labor Board, with members appointed to represent wage workers, employers and the public. In accounting for the contrast in deportment which he had noted, I explained to my British friend that if, having argued their cases before the United States Supreme Court, the opposing lawyers were not only invited to join the Justices in discussing how the cases should be decided but between them given twice as many votes as the Court holds, it is at least doubtful if the Court would long be able to maintain a plausible semblance of serenity, even with the aid of black robes and the austere white pile which is the seat of its operations.

A "full Board," which it was customary to convene to consider matters of major importance, consisted of twelve members, four on a side. However, a division of the Board composed of two members on a side had full power to act, and occasionally each side was represented by a single individual appropriately equipped with proxies. This was less often true of the labor side than of the others for, while the Labor members were appointed as representatives of workers in general, the labor membership was divided between representatives chosen from the American Federation of Labor and the Congress of Industrial Organizations, and they generally wished to be present when cases involving their respective organizations were acted upon. Eight Public members, all Presidential appointees, devoted their full time to the work of the Board. In addition to four regular and four alternate Labor and Industry members, appointed by the President, these groups each had about a dozen substitute members of their own choosing who, with the approval of the Board, had full power to act. This membership arrangement made it possible to have several War Labor Boards in session simultaneously, as was frequently the case.

The business of the Board consisted of carrying out two assignments which were given to it separately, but which were often inextricably

linked. One for which the Board was created by the Executive Order of the President in January, 1942, and continued by the War Disputes act of June, 1943, was to settle labor disputes which threatened to interfere with the successful prosecution of the war. The other assignment, which came originally from Congress in October, 1942, and which it carried out under the general direction of the Director of Economic Stabilization, was "to stabilize wages so far as practicable . . . on the basis which existed on September 15, 1942."

Business got to the Board, which had under its jurisdiction the wages and working conditions of about 25 million wage workers, in two general ways. One was in the form of disputes certified to it by the Secretary of Labor, whose certification stated that they ". . . may lead to substantial interference with the war effort. . . ." The other main line of business of the Board originated in applications for approval of changes in the compensation of wage workers, which was sought to make sure the changes were in accord with the national wage stabilization program.

The disputes certified to the War Labor Board ranged all the way from those involving general increases in wages and far-reaching changes in working conditions for hundreds of thousands of employees to those involving what at first glance might seem to be remarkably trivial grievances of single individuals. The superficial magnitude of a grievance, however, is no guide to its actual importance in disrupting labor relations. This fact was driven home to me a few years ago when, while working to avert a threatened strike of the employees of a large inter-urban electric railroad, I found that perhaps the most menacing issue was that of whether or not the members of the train crews were to be allowed to take off their coats during hot weather. Representatives of the management intimated that they might get together with the workers on changes in wages and hours of labor involving the increased expenditure of millions of dollars annually, but on the shirt-sleeve issue, never! When the workers remained adamant on what struck me as their reasonable demand not to be required to swelter in the summertime, it finally developed that the general manager of the railroad was confident that if the members of the train crews were allowed to take off their coats in the summer, the next thing they would want to do would be to roll up their sleeves. He said in no uncertain terms that he would rather see the line stop operating than tolerate such an affront to what he regarded as respectable railroading.

Similarly, while seemingly very trivial, the issue of whether or not a physician's certificate that a particular worker's absence from work was due to illness should be held by the worker or the company—a case actually certified to the War Labor Board—may touch hidden

springs of passion which make it a matter of first-rate importance. Sometimes it is fairly obvious that a superficially trivial issue has relatively important ramifications. This was true, for example, of a dispute certified to the Board on the issue of whether a particular group of workers should be classified as working in the mouton industry or the leather and tanning industry. No doubt variations in the permissible rates of pay depended upon the classification approved. Likewise, when the head of a union precipitated a dispute which reached the War Labor Board by refusing to bargain with an employers' association, his principal complaint was that the representative of the employers' association persisted in mispronouncing his name in a peculiarly annoying way; but it was a safe bet that more than hurt feelings were involved. No doubt bargaining with the individual companies grouped in the association seemed to the union a more promising way of attaining its objectives than bargaining with the association. Incidentally, the case was complicated by the fact that the representative of the employers' association said the union leader persisted in mispronouncing his name, too, but he was inclined to be more tolerant of this social negligence.

Because the Board accepted for settlement such a large volume and variety of issues, it was more or less continuously taxed by its Labor and Industry members, often in the wake of an unpalatable decision, with scuttling the processes of collective bargaining. There was inevitably much truth in this contention. The very fact that the Board was available to act as final arbiter of labor disputes discouraged collective bargaining. Such bargaining was also further discouraged at times by the fact that the Board accepted some disputes before the parties had much more than met each other and a few before they had even done that.

It is possible, however, to exaggerate the deleterious effects of the Board's operations on collective bargaining as a whole. This is indicated by the fact that there was a great increase in both the number and scope of collective bargaining agreements during the period of its existence. In 1940 about 30 per cent of our industrial workers were covered by collective bargaining agreements. By 1944 about 45 per cent of a much larger working force was covered. Sometimes what seemed to be happening was not that the process of collective bargaining was being scuttled, but that the process, or at least part of it, was being transferred to Washington where, when great national cases were being decided by the Board, representatives of the employers and workers swarmed and bargained all over the place, sometimes with the benefit of Board members, sometimes in last minute efforts to avoid their ministrations.

Both because of its membership in the mass production industries and by design, the CIO specialized in putting together great national cases involving major changes in working conditions for hundreds of thousands of employees. By an historic *tour de force* its Steelworkers managed to consolidate in a single proceeding 86 cases directly involving all of the major steel producing companies in the country and over 400,000 production employees. It took no special design, however, to bring over 325,000 workers into a single General Motors Corporation case because the labor relations of 115 of its plants in all parts of the country are governed by a single master agreement with the United Automobile Workers, CIO.

When a case involving a dispute was accepted by the Board, a decision always made in Washington, it might travel any one of a variety of routes to final settlement. The Board maintained twelve Regional War Labor Boards which blanketed the country with their geographical jurisdictions and half a dozen special industry Commissions to handle cases originating in industries such as shipbuilding, motor trucking, and newspaper publishing. If a dispute case was referred to one of these agencies, which had power to act for the Board, it had about a two to one chance of being finally settled by one of them. It was possible, however, for either party to appeal to the National Board from a Regional Board or Commission decision, and though the grounds for appeal were rather narrow, approximately one-third of the total of the dispute cases decided by the Regional Boards and Commissions in 1944 were appealed.

Like the National Board, the Regional Boards and Commissions were set up on a tripartite basis and appeals from them to the National Board were filtered through a national Appeals Committee which, after giving them another tripartite going over, made recommendations to the National Board about what to do with the issues involved. With the aid of standing national panels, which made recommendations to it, the National Board acted directly on cases originating in a number of industries including shipping by water and airframe manufacture. It proceeded in the same way in handling cases cutting across regional lines, sometimes receiving major national cases directly from special panels but usually after they had been filtered through a tripartite staff Review Committee. Voluntary applications for approval of changes in wages were first filed in the local offices of the Wage and Hours Division of the Department of Labor where applications not requiring approval were sifted. Those requiring approval, which in 1944 reached the rather staggering total of 191,000, then went to the Regional War Labor Boards and Commissions. If the application was

denied by them, an appeal could then be made to the National Board which also acted originally on some applications which were interregional in scope.

By these various routes the National Board in the later months of its existence had flooding in upon it for final decision a monthly average of almost 600 cases, about two-thirds of which involved disputes and the balance voluntary applications for approval of wage adjustments. About 400 of them called for review on appeal and the balance for original action by the Board. In dealing with this flood of cases the Board turned out an average of over 100 decisions a week, all of them after each case had been worked over at least once, and usually several times, by tripartite groups representing workers, employers, and the public and almost always for the Labor and Industry members had parted company completely on the important issues, with the Public members casting the deciding votes.

Once the War Labor Board had decided to issue what it redundantly called a Directive Order, the three sides generally stuck together on the proposition that it should be obeyed, regardless of what they may have thought of it in the first place. Thus, the Industry members voted to take the step which resulted in the Army's occupation of some Montgomery Ward establishments, even though the order in question, which the company refused to obey, contained provisions which they had strenuously opposed. Likewise, it was only rarely that the Labor members refused to vote to utilize all of the powers available to the Board to enforce its orders, even though they were orders which they had bitterly opposed as adverse to the interests of the workers involved. In thus rising above partisanship they, and the Industry members, frequently sacrificed popularity and perhaps sometimes prestige as leaders of the groups they represented on the Board. In dealing with broad questions of policy as well as with the recurring crises in the career of the Board, the Industry and Labor members also frequently acted and spoke with concern for the enterprise as a whole.

In the process of deciding cases, however, the Labor and Industry members generally hewed strictly to the line of partisanship. With individual and fleeting exceptions, their general attitude was perhaps typified by a remark which a Labor member, who was also the head of a national union, made to a Public member to whom he was complaining about the Board's decisions on certain issues in the case in which he was particularly interested. When the Public member insisted that the Labor member was being fairly treated, he retorted, "We don't merely want a fair decision; we want a favorable decision." He reflected a common attitude on the part of both Labor and Industry members.

The wholehearted pursuit of victory rather than truth resulted in the use of quite a collection of histrionic tricks by the Labor and Industry members which were designed to sway the votes of the Public members in one direction or the other. One was to feign great indignation that the Board should fritter away its precious time with further bootless discussion when the discussion seemed to be opening up the possibility that, if continued, the decision which had seemed safe for their side might go the other way. A variant of this technique was for the side which wanted to hurry its victory to start recording its vote by calling and sometimes almost chanting "aye" or "no" while the discussion of the case was still going on. Another was to belittle the knowledge or good sense, or both, of authorities cited in opposition to their position. Still another was to pretend a passionate devotion to strict adherence to the Board's rules of procedure when there was advantage in doing so, and to write the rules off petulantly as the handiwork of pecksniffian bureaucrats when it worked the other way.

Certain Industry members made it a standard practice to indicate at the outset of the sessions in which they participated that it was, of course, preposterous to suspect that any employer was going to get an even break from a New Deal outfit like the War Labor Board, the design apparently being to get the Public members to lean over backwards to avoid paying out on the charge. Some of the Labor members also worked much the same system in reverse by quite explicitly deploring the bias, at least on the part of certain Public members, against the modest aspirations of their clients. There is little reason to believe that these as well as many more similar devices to win friends and influence Public members, most of them variants of the theme that "We wuz robbed" or surely are about to be, had much if any effect on the course of War Labor Board decisions. They simply added in their peculiar way to the strangely murky atmosphere in which the Board often operated.

In mastering the art of catch-as-catch-can debate at close quarters, most of the Labor members of the Board had a long head start on their colleagues. They had not only had to think but to talk themselves to their places in leadership in the labor movement and through tough competition. Among the Industry members, however, they found such apt pupils that even though most of the Industry members rotated between their places on the Board and posts in industry and thus were less steadily on the job than their Labor confrères, there was toward the end of the Board's career no consistent preponderance of skill on either side in the application of the peculiar arts of argumentation and obfuscation involved.

On both sides, of course, there were marked differences in the indi-

vidual techniques used in arguing cases. Some Labor and Industry members operated more or less in the manner of heavy tanks plowing ahead doggedly and relentlessly while others skipped back and forth over the ground with a speed and skill suggestive of the best broken field runners in football. But, however tricky their maneuvers, none of them lost sight of their objective, which was almost invariably to win the case. And, with few individual exceptions, if that involved letting the Public members vote under a misconception of the issue or its significance, or perhaps even fostering the misconception a little—well, it was up to the Public members to look out for themselves.

As the abuse which was so freely dispensed about the Board involved relatively little personal rancor either on the delivering or receiving end, so the disingenuous manner in which the Labor and Industry members sometimes conducted themselves was no reflection of their personal integrity which, I am sure, was uniformly above reproach. On the War Labor Board theirs was usually a personally detached and almost professionalized rôle of advocacy of which the objective was to win. While, I am told, there is nothing new about the performance of such a rôle in the field of labor relations, it was relatively novel, as well as notable, to have it carried on not merely under the aegis of the government of the United States but also by officials in the person of Labor and Industry members carrying commissions from the President of the United States. The code authorities invented a decade ago by the National Recovery Administration foreshadowed in some measure such a setup but were by no means so comprehensively tripartite. The Industry and Labor members of the War Labor Board first acted as advocates using all the tricks of the trade and inventing new ones from time to time. Then they presumably switched to the rôle of judge, to pass upon the validity of their own arguments; and combined they had, as judges, twice as many votes as the Public members. In such a setup, the security of the public interest, of course, rested largely on the fact that the Industry and Labor members were chronically disagreed about what would serve it. This almost always left it to the Public members to settle the question, though in a few cases, usually involving voluntary applications for wage increases, the Industry and Labor members gleefully got together and overrode the Public members. If, however, an Industry or Labor member had shown consistent symptoms of abandoning his partisanship and acting judicially, he would surely have seemed to his associates on his side of the Board to be losing his grip on his job.

Even though the judicial rôle of the Industry and Labor members was largely a fiction, there were important and, I believe, decisive

public advantages in the tripartite setup of the War Labor Board, both as an agency to settle wartime labor disputes and to administer the national wage stabilization program. It is axiomatic that the true inwardness of a labor dispute often bears little or no relationship to what is being proclaimed about it—a fact which makes it possible to have a complete documentary record of the dispute and still have no idea of what it is really about. Their Labor and Industry colleagues could and did give the Public members crucially important help in overcoming this difficulty by letting them know, in those rather subtle ways developed by people who work closely and continuously together, the real significance of the dispute involved and what would suffice, if not be satisfactory, as a remedy. Thus, though it was decidedly not one of adding judicial strength to the Board, the tripartite composition did add much to its capacity to deal effectively with labor disputes.

Also the tripartite setup, in my opinion, made a crucially important contribution to wartime wage stabilization. Since the Labor members consistently voted for wage increases, no matter how completely they conflicted with the wage stabilization program, it may seem ridiculous to contend that their participation was essential to the success of a Board administering the wage stabilization program. If, however, organized labor had had no share in the administration of the program and hence no responsibility for it, there might well have been no program at all. In the interest of getting more pay immediately which many organized workers unquestionably could have done, the leaders of organized labor might well have decided to try to do away with the wage stabilization program and take their chances on the runaway inflation against which the program was designed to guard. And they might well have succeeded, too. Consequently, labor membership on the Board was probably a *sine qua non* of any wage stabilization program at all, and a public benefaction as such.

The tripartite composition of the Board also seemed to me to give it a certain amount of immunity from political attack which added to its effectiveness in getting ahead with what was frequently its inflammatory job. Quite a lot of the unpopular business of the Office of Price Administration was initiated by wage adjustments authorized by the War Labor Board. To attack the Board for this, however, would have involved direct conflict with representatives of the nation's most formidable labor organizations. It was safer to lambast OPA which had no such political armor—a fact reflected, I believe, in the relative volumes of political abuse dispensed to these two associated agencies. While the War Labor Board certainly had no political glamour, it came off relatively unscathed in the halls of Congress, not by accident, but in considerable measure by virtue of its tripartite composition. This same

composition extended to hundreds of tripartite committees and panels set up by the Board throughout the land to deal with specific cases. These agencies provided their membership with a source of both power and income which may stimulate a considerable interest in the continuation of a tripartite setup for dealing with disputes over wages and working conditions.

The partisan pounding to which the Public members were subjected might have been of no particular consequence if they had had the time and materials with which to study carefully the cases presented to them. Such study was usually given to major policy-shaping cases, but in dealing with run-of-mine cases the Public members rarely had time even to glance at the record before such cases were put up to them for decision. If it was a case appealed from a Regional Board or Industry Commission, the record frequently contained no explanation whatsoever of why the Board or Commission decided the case as it did, leaving it to the National Board to try to guess the answer from the conflicting contentions of the embattled parties.

There may well have been safety in numbers, however. To keep anywhere near on top of the tremendous load of work which was piled in upon it, the Board was required to decide so many cases that the errors due to high speed consideration may have balanced out. Also, solace of a grim sort can be found in the fact that deciding labor disputes is such a crude business, in terms of the handling of the issues with scientific precision, that there is no certainty of decisive loss when it must be conducted in a relatively offhand manner. Those who crave industrial peace and tranquility must find it a frightening fact that almost everything talked about in settling a labor dispute lies in the field of controversy. But given that state of affairs, it may be that the best thing to do is to fence off a ring for the contestants in labor disputes, as a tripartite setup such as that of the War Labor Board tends to do, and hope that they will stay within its confines in struggling toward a composition of their differences.

For all three sides of the Board, one of the completely unsolved problems remained that of imparting to its tripartite machinery a modicum of administrative efficiency. At its best a Board is a cumbersome administrative instrument. When it is divided into three parts, two of which conceive their interests on many issues to be diametrically opposed, it often becomes superlatively inefficient. The two sides pull and tug while the business of the Board is stalled in the middle. To aggravate the inefficiency inherent in its tripartite setup was, of course, the fact that the business of getting the Board's scheduled work done was continuously being interrupted by new crops of crises demanding immediate attention.

It was suggested, of course, that administrative inefficiency might be a constructive quality in an agency engaged, as the War Labor Board was, in administering a wartime wage stabilization program since, in its own way, such inefficiency served a basic purpose of the program to put brakes on the granting of wage increases. However, if any gain was made for wage stabilization in this perverse way, which is dubious, it was made at the expense of increasing the dangerously explosive character of the labor disputes referred to the Board. Consequently, as a general proposition all three sides of the Board not only deplored its administrative inefficiency, but struggled to overcome it by hard work. There still remained the ironic fact, however, that the harder the Labor and Industry members worked at their partisan designs, the less might finally get done. In spite of this remarkably self-defeating administrative quality of a tripartite setup, the Board, by dint of long hours and multiple shifts, somehow managed to get through an enormous quantity of work, with the aid of an extraordinarily diligent and competent staff.

Along with the problem of making the Board operate efficiently, neither workers nor employers fully solved the problem of securing completely effective representation on it. One of the complications which confronted employers can be illustrated by a case involving the salmon packing industry of Bristol Bay which is above the Arctic Circle, some 2,000 nautical miles north of Seattle. The local Indians who worked in the fisheries and canneries during the packing season were organized by the CIO and, consequently, the CIO members of the National War Labor Board had a direct interest in their local union. When, however, a particularly tortuous dispute involving these Indians came to the Board, it fell to the lot of an Industry member from an oil company which has the geographic center of its operations deep in the heart of Texas to take the lead in representing the employers. In order to do an effective job, which he did, it was necessary for him to apply himself ardently to the problems of an industry about as remote technically and geographically from his own as it is possible to get. Not all the Industry members had such adaptability. Some of the Industry members also had difficulty in getting over the habit, or in persuading their clients to get over the habit, of thinking that decisions should be weighed primarily by reference to the immediate cost and without regard to long-range and wide-range ramifications which were often imposing. Indeed, the attitude of some of them was reminiscent of the man who, after a native had darted out of the Cuban jungle and taken a pass at him with a bolo knife, cheerfully remarked, "He missed me!" "Wait 'til you swallow," his more experienced companion ominously replied.

While the Labor members of the Board presumably represented all of the workers subject to its jurisdiction, organized and unorganized alike, they came to be selected exclusively and in equal proportions from the ranks of the CIO and the AFL. This left without direct representation on the Board about half the workers subject to its jurisdiction. These included not merely millions of unorganized workers, but some 1,750,000 workers organized in "independent unions," *i.e.*, unions not affiliated with the CIO and the AFL, including national groups of such formidable proportions as the United Mine Workers of America. The independent unions had representatives on various Board committees but not on the Board itself.

The Labor members of the Board would vehemently protest any intimation that, afforded the occasion, they were less ardent advocates for independent unions and unorganized workers than they were for the organizations from which they were chosen, and they would be entirely sincere about it, too. Also, they would be able to document their protest not merely by citing a large output of militant rhetoric on behalf of independent unions and unorganized workers, but by masses of statistics showing that the members of the organizations represented directly on the Board fared no better at its hands in the matter of wage increases than did the members of independent unions and those unorganized workers whose cases occasionally got before the Board through voluntary applications of employees for approval of wage changes.

Figures of this kind, however, leave quite a bit to be desired. For example, they may show that large numbers of unorganized workers who started from a low wage base did far better relatively in wage increases during the war than those grouped in the most powerful unions. As an indication of how they fared, however, there is something wrong with this picture. Also, wage statistics do not reflect what may be very valuable benefits to workers in the form of improved working conditions, which might be ordered by the War Labor Board for those who had the requisite organized strength to get their demands to the Board. That white collar workers by and large did not have such strength was one of the most consequential facts about our wartime economic setup.

Likewise, as an indication of how workers actually fared before the Board, the wordage put into the record on behalf of workers not directly represented on the Board shares the general weakness of documentary records in the field of labor relations. There was obviously vastly more to pressing a case to a successful conclusion, particularly through the sticky administrative entanglements of the War Labor Board, than arguing the case strenuously in the Board. But how the

effectiveness of performance in this line is to be accurately measured I have no idea. It is my impression that it was a decided advantage to workers to have direct representation on the Board, but I am aware that I would have a hard time proving conclusively that this impression is correct. At any rate, that CIO and AFL members did not regard each other as equally well qualified to handle all cases is attested by the fact that CIO members consistently declined to represent labor in consequential AFL cases, and vice versa. This practice hardly supports the proposition that the affiliations of the Labor members made no difference in their work as advocates of the labor side.

The validity of this proposition was also violently fractured from time to time when jurisdictional disputes between the AFL and CIO got before the Board. Then the Industry members were likely to be privileged to sit by and watch a battle between Labor members which made their own customary conflict with the labor side seem positively anemic. I suppose that the primary reason for this vehemence is that union leaders regard an assault upon their jurisdiction by another union as a stab in the back or, at any rate, a stab in the side. While marveling at the heat poured into the jurisdictional rows between unions, however, it has also occurred to me that part of the explanation may be found in what seems to be the extraordinary degree of insecurity in the position of most labor leaders. If they lose their jobs, which may be jobs giving them great national power and prestige, I am told they are likely to have a lot of trouble in finding any landing place until they get all the way back to the factory benches or crafts from which they started. It is my impression that the paucity of economic cushions for deposed labor leaders has something to do with the ferocity with which they resist what looks like encroachment upon their domains.

Occasionally a union leader lands on an occupational cushion provided by a job calling for work in the field of labor relations on behalf of an employer or groups of employers. Offhand, this might seem to be a smart arrangement from the employer's point of view. I am sure it is often true, however, that when a union leader moves over to the employer's side of the industrial relations setup he leaves most of his usefulness to the employer in negotiations in this field behind him. Indeed, when I served as the man in the middle of a tripartite setup for settling labor disputes (not the War Labor Board) which had as an employer member a former union official, it was almost a ritualistic part of the proceedings for the labor members to counter anything their departed union colleague said by an excoriation of him as a turncoat. Consequently, if anything is going to be done by way of increasing the economic security of union leaders, it must be done by the unions themselves or the government. Since a tripartite arrangement such as

the War Labor Board tends to have that effect, it may be possible to claim as one of the advantages of such an arrangement some slight tendency to reduce the ferocity of jurisdictional disputes which promise to plague the post-war period.

With the organization of foremen and other supervisory employees in full-fledged unions, to which the National Labor Relations Board has recently given its blessing, the jurisdictional conflict between the AFL and CIO may attain new heights both in complexity and intensity. This possibility is suggested by a development at the Baldwin Locomotive Works at Eddystone, Pennsylvania, where the United Steelworkers, CIO, represent about 16,000 production workers and "working leaders," and the International Association of Machinists, AFL, represents the supervisory employees, about 500 in number. When the company—to take account of what it plausibly said were shifting production requirements—reclassified about 225 supervisory employees as "working leaders," its action had the effect of shifting them from the jurisdiction of the AFL Machinists to that of the CIO Steelworkers. The attendant explosion both locally and in the War Labor Board forecasts a new line of jurisdictional conflict which may well be extended in increasingly intricate patterns if the extension of union organization to foremen and other supervisory employees is upheld by the courts.

Of course, there is much more to the rivalry between the CIO and the AFL than the urge to get and hold members. There is conflict in basic objectives. While there was relatively little talk about such objectives around the War Labor Board, the performance of the AFL representatives made it clear that on the whole that organization is sticking to its basic ideal of business unionism and has as its ultimate purpose that of getting more pay for its members. If it is necessary to organize employers or even a community to do that, well and good, but that is an incident, not an objective.

A major segment of the CIO is obviously interested in organizing or reorganizing the economic scheme of things on a more equalitarian basis as at least an intermediate objective in itself. It realizes that at this juncture this is not going to be done by salaaming to the slogan "Keep the government out of business," but by getting the government into business on its side. Operating on this principle, it put together dispute cases for decision by the War Labor Board in which it made not merely conventional demands, such as those of more pay and less work, but demands against which the Industry members protested on the ground that they "usurp the prerogatives of management," as some of them would do, and no doubt were designed to do.

In piling wordage into the record condemning the shortcomings of

the War Labor Board, the CIO members yielded little or nothing to their AFL confrères. However, this is another of those manifold cases in the field of labor relations where the formal record does not reveal the real situation. This quite clearly was that the CIO representatives recognized the government as a resource in moving toward its objectives, and frequently sought to use it as such, while the dominant AFL leadership sincerely chafed under the restraints imposed by the Board. It uncomfortably accepted them during wartime but it was determined to unload them at the earliest post-war moment, and return to collective bargaining along traditional lines. The essential difference between the CIO and the AFL lambastings of their treatment by the War Labor Board was that the AFL almost always meant them. The fact that a large part of the CIO clearly had use for an agency like the War Labor Board in its business gives the work of the Board, including that of its tripartite paraphernalia, a significance extending beyond the war period which it otherwise might not have.

In spite of the numerous rivalries and antipathies of the organizations from which they came, the Labor members presented a united front on the vast preponderance of the issues that came before the Board. This was also true of the Industry members. In the course of considering a case they might differ among themselves; but when it came time to vote, they almost invariably lined up solidly on their side, leaving it to the Public members to do such individual dissenting as was done. Some of the Public members did quite a bit, sometimes recording in written opinions their reasons for disagreeing with their colleagues. Others did almost none at all, perhaps in deference to the view that Public members had trouble enough without risking more by disclosing rifts in their ranks. At any rate the pressures exerted both by the task at hand and the tripartite organization of the Board seemed to be such as to subdue individuality within the ranks of those lined up on the three sides. As a result, the danger of having the board persist in a mistaken course may have been considerably enhanced.

In dealing with most of the key issues which recurred continuously in cases coming to the Board, both the Labor and Industry sides came to take rigidly fixed positions. For example, the Labor members almost invariably voted for any wage increase regardless of whether or not it clearly conflicted with the prevailing wage stabilization policy of the Board and the government, of which they strenuously disapproved in its later wartime stages.[1] The Industry members even more invariably voted against orders designed to grant protection to unions, such as

[1] The observations on wage stabilization reported here do not cover the period after V-J Day.

those calling for maintenance of union membership as a condition of keeping a job. They did this in spite of the fixed policy of the Board to issue such orders under appropriate conditions. In dealing with some of the other issues before the Board, the Industry and Labor members were slightly less adamant but their positions remained firmly enough fixed so that it was possible to guess correctly at least 95 times out of 100 how they would vote on any given issue.

While, in sharp contrast to the Labor members, the Industry members almost always voted to uphold the Board's wage stabilization policy, they were quick to insist that this is not because of any deep admiration of this policy. Quite on the contrary, most of them expressed the general view that the Board's wage stabilization policy consisted of a complicated system of dodges and detours by which it was possible to grant a large variety of increases in pay for workers while seeming to "hold the line." While the Labor members ardently subscribed to the proposition that the Board's wage policy was tortuously complicated, they regarded these complications as akin to those of a system of barbed-wire entanglements, trenches, and pillboxes treacherously placed between the workers of the country and their attainment of their objective of increased wages.

Likewise, while they consistently voted for such provisions to protect unions as the Board dispensed, the Labor members were always quick to insist it was by way of making the best of a niggardly deal. In exchange for having given up the right to strike in wartime, they insisted that the organized workers of the land should be granted far more security for their unions against the assaults of predatory employers than the Board typically granted. The Industry members, of course, took precisely the opposite position and insisted that this was one of the more noxious ways by which the Board was turning the country over to the mercies of organized labor.

As is generally the case, the truth about the Board's handling of these key issues of wages and union security lay somewhere between the partisan extremes typically taken by the Industry and Labor members. If one's purpose were to show that its wartime wage stabilization program was a rubbery and slippery affair so far as holding the line on wages was concerned, that could be persuasively done by emphasizing the extent of the wage increases which its controlling policies made theoretically possible. For example, one could show that, by using all of the stretch in the wage stabilization program, it would have been possible during the life of the Board to double the rate of pay of some workers in the lower wage groups for doing the same work—raising it, say, from 40 to 80 cents per hour—and still comply fully with all of

the rules and regulations. To make such a demonstration, it would be necessary to unravel the intricacies of a complex of wage stabilization policies, having to do with such exotic matters as brackets, substandards, job evaluations, rate ranges, fringes, automatic as well as merit progressions, reclassifications, and intra-plant inequities. Not many people and not all union representatives knew how to do this, which of itself is a fact of great economic and social significance, but it could be done. In celebrating an anniversary of the establishment of the Board in song, a sophisticated staff quartet merrily offered a hint on how to proceed by singing, to the tune of "Yankee Doodle:"

When your wage rates far exceed
The Minimum of the bracket
And substandards is no lead,
We've got a better racket.

When there is no other slant
Under stabilization,
Base your case on intra-plant—
Just say reclassification.

Incredible as it may seem, that parody, written in the War Labor Board idiom, was about the homely subject of how much people are to get paid for their labor. To grind out any such wage increase as that mentioned, however, it would have been necessary for the War Labor Board machinery to turn over at a speed to which it was quite unaccustomed. That fact alone makes such a calculation misleading as a guide to what the Board actually did, and so does the fact that the calculation is based on the fuller exploitation of wage increase possibilities than many had either the knowledge or power to make. Nonetheless, it is true theoretically that its policies permitted increases in wage rates of this magnitude. In addition they regularly accommodated awards such as those for vacations and paid holidays which, while they did not increase wage rates, increased the compensation of those receiving them.

Of course, getting an increase in the amount of pay for doing the same amount and kind of work is only one way of increasing the earnings of a worker. Other major ways are getting a promotion to a job carrying a higher rate of pay or working longer on the job and thus getting premium pay for overtime. Indeed, it is largely because of working longer hours and on better paying jobs that during the war period the average weekly earnings of workers in industry increased about four times as much as the average rate of pay for doing the same job—by about 77 per cent from January 1, 1941, to April 1, 1945, as opposed to 20 per cent for the same period. While higher paying jobs are presumably harder jobs, one bent upon showing how generously

the stabilization program accommodated wage increases would, no doubt, argue that a lot of the promotions had something in common with the arrangement whereby waitresses working for government contractors in Alaska were classified and paid as journeymen carpenters while other workers in the steward's department were given the financially exalted title and pay of crane and bulldozer operators. That set of "promotions" showed up in the record because the federal government was paying the bill. Those bent upon belittling the effectiveness of the wage stabilization program would argue that many of the same general character did not show up because the War Labor Board lacked the facilities to uncover them, as it also lacked resources to cope successfully with some cases where the provisions of the wage stabilization program were completely ignored.

However, it is also possible to produce a persuasive demonstration that the wage stabilization program was niggardly in granting wage increases—a possibility which the Labor members never left long ignored. If the argument is about wage rates, it is possible to cite cases of organized workers, with relatively high rates of pay, who in spite of much trying found themselves consistently barred by War Labor Board policy from receiving any increases in wage rates whatsoever during the war. In 1945 they were receiving the same rates of pay they received in the thirties. For industrial workers in general the increase in the average rate of pay for doing a given amount of work (about 20 per cent from January, 1941, to April, 1945) lagged well behind the increase in the cost of living (about 30 per cent for the same period) during the war, thus imposing upon the workers the necessity of working longer or at harder jobs to protect their standard of living. Also, in making a demonstration of the firmness of the wartime wage stabilization program, it is possible to cite thousands of cases where, even though employers were not only willing but anxious to grant wage increases, their petitions to do so were denied. These denials of wage increases voluntarily proposed offer perhaps the most conclusive evidence that the wage stabilization program was no pushover as a matter of policy. As a matter of enforcement, the records of the Board indicate that the program was observed by an overwhelming proportion of the substantial and responsible companies which constitute the bulk of American industry with violations limited largely to a fringe of fly-by-night operations of relatively slight magnitude.

While it was conventional for the Industry members to condemn the wage stabilization program as a sort of economic shell game in which employers played the suckers' rôle, most all of them were willing to concede, at least on condition that it would not be used against them in a Board argument, that wages along with prices would have gone

far higher but for the program. However, lest this seem to concede too much, most of them would also have been quick to add that such success as there was, was won much too dearly by concessions to organized workers, other than those directly involving rates of pay, which served to give them a stranglehold over American industry. Asked to be specific, they might first have mentioned various "fringe" adjustments, such as those granting paid vacations and holidays, but high on all and first on many bills of particulars would have been "union security," involving arrangements such as those calling for the maintenance of union membership and the checkoff of union dues.

As a wartime expedient, some of the Industry members initially looked favorably upon the idea of requiring workers holding membership in a responsible union to maintain that membership in good standing on the pain of losing their jobs, and participated in the formulation of such a policy. The principal argument in favor of it was that since the unions, or at any rate the responsible officers of the CIO and AFL, had pledged themselves not to strike during the war and thus reduced their possible usefulness to their members, they should be helped in holding these members by an order requiring their members to keep their membership in good standing (primarily to pay their dues) on penalty of losing their jobs. Such an arrangement, it was emphasized, would not require anyone not already a member of a union to join a union to get or hold a job, but would simply require those already in the union to maintain their membership in good standing. In doing so, it would not only prevent anti-union employers from taking advantage of the patriotically self-imposed weakness of unions, but it would also reduce jurisdictional conflicts between the unions by requiring union members to stay put unionwise.

This latter possibility prompted me to do some pioneering in the development of the maintenance of membership policy in the lumber industry of the Pacific Northwest. There, early in the war, I served as the chairman of a special commission which recommended to the predecessor of the War Labor Board that the policy of requiring union members to maintain their membership be applied in the situation where rival unions at times seemed almost more interested in fighting each other for members than they did in producing lumber, badly needed to fight the Axis. It later became the policy of the War Labor Board to grant a maintenance of membership provision to a responsible union, regardless of whether or not there was any showing that its membership was threatened. The primary gauge of the union's responsibility was its wartime strike record.

Why the Industry side eventually turned so completely against the maintenance of membership arrangement is another of those questions

which the formal record of the Board probably will not answer satisfactorily. Despairing of having their position prevail, the Industry members reached a point where they simply voted against maintenance of membership and let it go at that. Unless there was some substantial charge that the union in question was irresponsible, the Public members promptly joined the Labor members in voting in favor of it. In employers' petitions to the Board to eliminate maintenance of membership provisions, which continued to pour in upon it in spite of its established policy to approve such provisions, a fairly standard set of objections were recited. They bore down principally on the proposition that the arrangement robbed both the employer and the workers of their freedom—that of the employer to hire people without regard to their affiliation with any private organization, and that of workers to get, hold and advance on a job on the same basis.

These objections, however, were present when the maintenance of membership policy first found some favor with the Industry members. Consequently, they offer no satisfactory explanation of the shift of the Industry members to adamant opposition to maintenance of membership provisions. In accounting for such opposition, which may be explained in some measure by changes in the composition of the Industry group, some of the Industry members would no doubt emphasize the fact that the policy of giving unions the protection of maintenance of membership provisions was initially justified as a *quid pro quo* for their pledge not to strike and was entitled to no more binding force than that pledge which was frequently broken. Such an explanation, however, would not account for the fact that the Industry members voted against maintenance of membership provisions for unions with perfect records of no strikes during the war quite as consistently as they did against such provisions for unions with badly blemished strike records.

In this connection it is interesting to note that after Russia entered the world conflict, perfect wartime no-strike records were made by a number of unions with so-called "left wing" leadership which previously had not seemed to have aspirations to attain perfection in that line, while some of the worst records were made by unions with what would be regarded as conservative, old line American leadership. This fact unquestionably bemused the Industry members in following through on the maintenance of membership policy, as it may also bemuse anyone else who is thinking about the post-war course of labor relations.

By adding up the number of man-days lost through wartime strikes (about 6½ million during the first half of 1945), it is possible to suggest that Labor's no strike pledge did not amount to much. What such

a statistic, which represents fifteen one hundredths of one per cent of the working time of industrial workers, more truly signifies, however, is that this is a very big industrial country. It seems clear that, as a matter of fact, the pledge served powerfully to retard the impulse of organized workers to use their striking power to "get theirs while the getting was good."

Perhaps the best single explanation of the shift in the position of the Industry members to complete opposition to the provision for union security is simply that they concluded, under what is obviously heavy and often passionate pressure from their employer constituents, that they had originally made a mistake in believing that unions needed some special protection during wartime because of their pledge not to use their economic power by striking. Support for that view can be found in the steady growth of union membership during the war (from about 8½ million members in 1940 to about 16 million members in 1945) and its expansion into many industrial units and communities where it never existed before. To many employers, particularly in the South, the idea that the employer should help the union maintain its membership was shocking to say the least. When it was combined with provision for a check-off of dues requiring the employer to collect the dues of union members and then turn them over to the union, which the War Labor Board commonly granted, it became scarcely less than maddening. And when, as sometimes happened, the employer was ordered to pay the local union officials for time devoted in working on grievances of union members and to give these officials special seniority rights to their jobs, "Well, suh!" as one of the Southern protestants put it, "I frankly despair of the future of this great federation of states."

Completely to the contrary, the Labor members insisted throughout that the Board's maintenance of membership policy provided too feeble protection against those employers who would gladly seize any opening for an anti-union drive, including that resulting from the weakening of the claims of a union on its membership by strict adherence to a wartime no-strike policy. Perhaps the most truly feeble aspect of the Board's handling of the union security issue, however, lay in the fact that it did not suceed in doing anything to ease the strife of the Labor and Industry members over it. On the contrary, their lines of conflict tightened until they were absolutely rigid. In the meantime, in the no man's land between them, untouched by constructive ideas or suggestions, was a key problem in the field of labor relations.

In addition to the paramount issues of pay and union security, the War Labor Board dealt with an almost infinite variety of other issues

certified to it for settlement. The first rôle assigned to it was that of settling labor disputes which threatened to interfere with the successful prosecution of the war. Consequently, its job tended to become as broad as the range of matters about which it is possible to have a labor dispute, and the talent which went into developing this territory seemed at times positively prodigious. As already indicated, the disputes came to it in all sizes and shapes. One case certified to the Board had well over a hundred separate issues and quite a few cases approached that staggering number of issues. Many others had only one issue involving a single worker. Perhaps the most important issues apart from wages and union security which regularly came to the Board were those involving the establishment of machinery to settle the grievances of employees and those involving rules to govern promotions and lay-offs. Other issues ranged down in seeming importance to those involving such matters as the towel supply arrangements and smoking privileges in privies.

Indeed, because of the extremely broad nature of its charter, the Board occasionally got mixed up, or mixed itself up, in disputes which it could be plausibly argued were not labor disputes at all. This was true, for example, in the notorious Petrillo case involving a fight over the payment of royalties on the making of phonograph records and transcriptions. The United States Supreme Court to the contrary notwithstanding, that was probably primarily a row in the field of trade and business practices. The Labor Board took it on, however, and ordered Mr. Petrillo's American Federation of Musicians to lift its ban on the making of records and transcriptions which it had imposed to penalize companies engaged in this business which had not met its royalty demands. Although the union successfully defied the Board's order, the case was by no means without consequence since it dramatically reminded other labor leaders of the fascinating possibilities in the royalty approach to sharing the proceeds of production—possibilities which may be extensively and strenuously tested over the next few years.

What will be the post-war consequences of the manifold orders the War Labor Board issued, particularly those prescribing working conditions which do not necessarily have the transitory character inherent in wage-rate regulations? With the passing of the Board, will the effects of these orders evaporate, or will a lot of arrangements stay in place although no longer supported by federal authority? As a general proposition the answer to that question probably depends upon whether or not the Board was bucking, riding along with, or getting ahead of the great surge in the organization and mobilization of the power of the wage workers which was in progress when the war started and which the war did not interrupt. On a question of that kind, the opinions of

the Board members would surely have split three ways. The Labor members would contend that the Board bucked the tide. The Industry members would no doubt say that it tried to speed it up. It would be my impression as a Public member that the Board moved along with the tide and necessarily did so as an essential part of the process of serving its primary purpose—that of keeping war production going full blast by keeping the industrial peace at home.

For example, when the war started the practice of granting vacations with pay for production workers in industry was spreading rapidly. Through its orders, the War Labor Board extended the practice and enlarged the awards until it typically ordered one week's vacation with pay for workers of more than one year's service, and two weeks' vacation with pay for workers with more than five years' service. It can be and is argued that this was one of the dodges the Board has used to grant pay increases and still not seem to do so. It is unquestionably true that by ordering paid vacations, shift differentials, and a variety of other "fringe" adjustments—so called because they are on the fringe of direct adjustments in pay—the Board relieved somewhat the always tremendous pressure to increase basic wage rates. It is also true, however, that in so doing it was merely extending lines of improvement in the terms of governing the employment of American wage workers which it found surging forward when it was assigned its wartime rôle. It is my impression that it would have been reckless for the Board to chop off these lines of development abruptly and thus complicate even further its double-barrelled task of preventing wartime labor disputes and stabilizing wages. However, if there is ever to be any final verdict on this question—which is doubtful—it must await the acquisition of a perspective which only the passage of time can provide.

So, too, must wait the final verdict on the validity of my personal impression that all things, and many of them strange things, considered, the War Labor Board carried out its assignment well. How, in the light of manifold cross purposes impinging upon it, the Board managed to do so is not a simple question. The basic answer, I believe, is that, in spite of all of the pulling, pushing, snorting, and pounding which enlivened its course, all elements of the Board were powerfully propelled by a deep sense of devotion to a country which even in wartime permitted such an untrammeled performance in handling labor disputes, instead of committing them to the much more tidy disposition of a dictatorship. At any rate, labor disputes which would cripple war production were prevented and wages were kept relatively stable. These were the major objectives of the War Labor Board. Of course, what the price of success in obtaining them will be, in terms of post-war headaches in industrial relations, remains to be fully determined.

Also, only the future can tell where we shall be when the surge in the rising tide of labor, which plays such an important part in any assessment of the work of the War Labor Board, has spent itself. It occurs to me that when as a nation we put together, or allowed to be put together, a corporate structure which gives about 200 industrial corporations control of almost half of all the nation's industrial assets and did so in a country with relatively democratic political and social institutions, we inevitably touched off such a development in the field of labor as that which is now going forward. For all I know it may end up by ushering in, a little late, the century of the common man. All I am reasonably sure of is that it will not be the century of the rugged individualist.

A RECONSIDERATION OF THE THEORY OF RENT

By DEAN A. WORCESTER, JR.*

In most discussions of rent, it is customary to demonstrate how the remuneration due each segment of land may be determined by either residual or marginal productivity analysis, to note how this distributes land to its most important uses, and to conclude that, since social costs do not determine the supply of land, the receivers of rents can be taxed in special ways which would not otherwise be justified. It is usually argued, implicitly or explicitly, that the existence of rent does not increase prices and that social costs, therefore, are in harmony with the money prices paid by consumers.

To be sure, there is a growing group of economists who turn their backs on all such analysis and define rent in terms which apply equally well to any factor of production and which in any case include only part of the total payments to any productive agent. That both groups deal with matters of substance is hardly open to question. That the proponents of the two groups can understand each other is less certain. And it is inevitable that the neophyte will find his footing precarious. He must distinguish among at least three general groups of theorists; the classical, of whom Marshall and Taussig have probably presented the best arguments although neither is hardly a pure Ricardian; the neoclassical, which in this case is no more than a shorthand expression for those who, with Wicksteed, Jevons, Davenport and others, agree with the definitions and most of the conclusions of Marshall but who believe that the marginal productivity approach is superior to the residual approach; and the Paretian, which is followed in general by Joan Robinson, K. E. Boulding, H. D. Henderson and others and which involves fundamentally different conceptions. The purpose of this paper is, then, (1) to trace in rough outline the steps which have led us to the present ambiguities, and (2) to make some positive recommendations designed to unify the now divergent points of view so as to increase the content of rent theory.

The argument proceeds through the following stages: (a) an analysis of the necessity for and the steps involved in abandoning the classical position that rent does not affect the market price of commodities; (b) how this abandonment makes necessary two theories of rent, one based on opportunity costs and the other based on real costs; (c) the manner

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by which the conceptual relationship between the two theories can be preserved; (d) how the Paretian concept inserts much detail into the classical and neoclassical systems but seriously impairs the meaning of the word "rent"; (e) the advocacy of the use of the term "rent" to indicate the full opportunity cost (or remuneration) of a unit of land, as defined below, when this is computed on the level of the firm; (f) the need for a new term if the concepts of the various groups of theorists are to be brought together—"factor profits" is suggested; and (g) subsidiary reasons for preferring marginal productivity theory in the determination of rent.

In the following sections we shall consider, first, the manner in which the various viewpoints within classical and "neoclassical" theory came into being, and, second, the effect of the introduction of the Paretian concepts upon this structure. Such a recapitulation is most fruitful if based on Marshall's writings[1] since his entirely too clever defense seems to lie at the roots of most of our difficulties. In referring to Marshall we must raise again some of the old issues which were once discussed to the point of utter exhaustion and essential futility. But perhaps, at last, they may now reveal the basic points of view in such a way that, rather than end in deadlock, they can contribute to a more rounded theory.

Semantics and Rent Theories

We may begin by defining "land." We are not interested in the physical characteristics of the various agents of production with which we are confronted. Rather, their economic aspects draw our attention. Thus, for purposes of this discussion, land will be thought of as that group of productive agents whose fitness *for a particular use* is not likely to change as a result of a change or even the elimination of the remuneration of its owners. It is evident, then, that this paper is concerned with the analysis of a certain kind of supply condition, and not with the classification of productive agents. No attempt will be made to discover an exact line between "land" and "capital."[2]

[1] All references to Marshall will be to the eighth edition of his *Principles of Economics* (London, Macmillan, 1938).

[2] Some may contest the value of such a discussion on the ground that a better theory of distribution can be evolved using anonymous productive agents rather than four heterogeneous categories named "land," "labor," "capital" and "entrepreneurship." While the author has no objection to the generalized approach, the different supply conditions ex[illegible]ited by different types of productive agents seem to justify quite different economic [illegible] toward the owners of the various agents. The case of a "fixed' supply is valuable [illegible]actical and as a limiting case even if it is not the most convenient concept when [illegible]ng to the whole field of distribution, and, more particularly, to the problem of [illegible]haustion of product. No one today would attempt to force all of economic reality into four types of supply conditions, but the intermediary cases will be more easily analyzed if the major limiting cases are understood.

While "land" may be defined at the outset, this procedure is quite impossible for "rent." Some of the things to which it might refer are:

1. An entrepreneural payment to certain agents of production.
2. Part of the entrepreneural payments made to certain agents of production.
3. The income received by owners of certain productive resources.
4. Part of the incomes received by owners of certain productive resources.

There are some other ways in which various definitions might be expressed, which would multiply the possible number of precise meanings, but this list points up the main issue at stake. Numbers 1 and 3 can both be derived from a single operational definition.[3] So can numbers 2 and 4. But numbers 1 and 2, 3 and 4, clearly refer to different concepts, and can be only improperly labeled by the same term. Yet each group is accepted by large numbers of economists, who do employ the same term in common. Those who prefer numbers 1 and 3, apparently believe that the essential characteristic of "rent" is that is the full long-run remuneration of a certain group of productive agents called, collectively, "land," while the other group believes that the essential characteristic of rent is that it is a surplus return.

Inadequacy of the Classical Synthesis

At one time the concept of rent as a surplus return was not thought to be incompatible with the concept of the full long-run remuneration of the factor "land." Marshall apparently did not think so, although by his time there were a number of economists, including Mill, Jevons and Wicksteed, who were beginning to show some doubt. Marshall's case rests on the social point of view, and on that ground is correct, as will be pointed out later. But from the standpoint of the individual firm he was mistaken, and as a result of his ingenious efforts to reconcile the two irreconcilables he perpetuated and gave great impetus to the widening divergences between the various definitions of rent. It is to be emphasized, however, that the English economists of that day were agreed as to the definition of the factor which they were discussing. Wicksteed, for example, went to great length to prove the identity of the values computed by the marginal and by the residual methods.[4]

[3] The author subscribes to the view developed in modern physics and generalized by the logical positivist philosophers who hold that a phenomenon is identical to the su[illegible] of the conditions which define it. Therefore, those conditions or operations necess[illegible] isolate the occurrence are its best definition.

[4] See Phillip H. Wicksteed, *Common Sense of Political Economy*, the 1935 repri[illegible] George Routledge, pp. 563-68. The first edition appeared in 1910. See also S. J. Chapma[illegible] "The Remuneration of Employers," *Econ. Jour.*, Vol. XVI (1906), pp. 523-28, quoted in G. J. Stigler, *Theory of Competitive Price* (New York, Macmillan, 1942).

Marshall admitted the validity of the marginal approach for theoretical purposes in his "Mathematical Appendix"[5] and used it in one place in his textual materials.[6]

In more recent years another, the Paretian, concept of rent has gained prominence among English-speaking economists, including H. D. Henderson, Joan Robinson, Kenneth Boulding, Robert Triffin and Albert Meyers. Although they use the term "rent," the result of the operations which they prescribe to isolate it is completely different from the results of the operations outlined by the classical or the marginal productivity theorists. Rather than the normal return to a certain group of agents of production, rent is defined as being the return to any agent of production greater than that required to keep it in its present employment. It is a return over and above (or in the case of negative "rent,"

[5] See Marshall, *op. cit.*, especially pp. 848 and 851.

[6] *Ibid.*, p. 535.

It may be helpful to sketch briefly Marshall's usual position. Typically, he thought of land as fixed in total supply, at least in old countries. When he turned to a consideration of an individual producer, he apparently decided that it was most realistic to assume that the land used by a single business man was also fixed, this time in the sense that it came in definite parcels of considerable size. He could then properly compute rent as a residual, with certain qualifications, after having determined the returns of such factors as might be variable by marginal productivity analysis. Each parcel of land would be allocated to its most important use in the long run as a result of the following process.

In the long run, or normal period, the entrepreneur would compare the productivity of each factor of production with the others with the sole exception of land. If it has been profitable to apply these factors intensively to land, a surplus return beyond the cost of the variable factors would result from the sale of the product, and this would give the firm the ability to pay rent. But other firms, and firms in other industries, might also be able to earn a surplus on any given piece of land. Competition would then take place for the whole unit of land resulting in its appropriation by the firm which could earn the greatest surplus with the particular parcel of land. Since the equilibrium rent is equal to the largest surplus, this would serve to allocate the various parcels of land to the same uses that a marginal approach would, assuming only that the land units were small enough so that all of each unit would be fully used by the successful bidder. This is a corollary of the demonstration that the computation of rent for any firm will yield the same result whether the residual or marginal productivity approach is used. Thus Marshall succeeds in allocating land without having it enter into the marginal elements of a firm's costs.

Jevons, Wicksteed, Davenport, and many others have argued against the Marshallian concept, holding that rent should not be measured as a surplus since it is unnecessary to do so, and it adds nothing to the explanation. Moreover, it makes the theory unnecessarily complex by putting rent on a basis different than other expenses and adds to the number of relatively unmanageable "surplus" returns. These theorists further believe that land is divisible and therefore may be properly regarded as a variable unit so far as each individual is concerned. Furthermore, they think that it *ought* so be regarded because of the smooth way in which it would then fit in the larger framework of economic theory. Marshall acknowledges the final point and condones it for this purpose, but not for general discussions. The dispute, then, was almost exclusively about the implications of the method and not the definition of the result. In either case, rent was defined as equal to the full normal return to land, a return which is equal to the maximum amount which it, with the coöperation of other agents, can add to the national income. The relative merit of these two approaches will be appraised in the final section of this paper. It is sufficient now to establish the identity of the definitions.

less than) the normal return to an agent, and is clearly a "surplus" return.

The manner in which the two major present-day definitions have grown apart can, perhaps, be best elucidated by reference to the ancient controversy within classical and neoclassical theory: Does or does not "rent enter into the costs of production" of commodities? The views expressed by Marshall postulated a harmony between market, or opportunity, costs and real costs. In taking this position Marshall seemed to maintain that rent did not "enter costs," and—by excluding it from the marginal costs of producers even in the long run—apparently based his conclusion on the Ricardian argument that the last units produced came from inputs of "labor" (and capital) on either the intensive or the extensive margins where the returns were just high enough to pay the "labor" (and capital) costs, leaving nothing for rent. He was, therefore, able to maintain the hypothesized harmony between social and private cost. While his basic argument is based directly on real costs rather than this argument, it, nevertheless, merits examination, since it has fathered the growth of contradictory definitions of rent.

An examination of Marshall's arguments will reveal that his own logic fails to support the supposed harmony in some cases, and that in the other cases he preserves his position only by his often undetected switch to considerations based on real costs.

Because of this it is not entirely clear that Marshall meant to imply that rents may not affect the long-run *prices* of goods, as distinct from their costs. For example, he says: "A rise of ground values may be an indication of a scarcity of space that will tend to raise traders' prices";[7] and again: "A rise in rent does serve as a medium through which the growing scarcity of land available for hops and other produce obtrudes itself upon his notice." In this case, however, he concludes by saying that: "But it is worse than inexpedient to say that the rent of the land does enter into their [the hops'] price: that is false."[8]

To say that it does not enter price, as distinguished from (real) cost, however, is not consistent with his later statement that "land shares the influences of the laws of demand and of substitution . . . because the existing stock of it, like the existing stock of capital or of labor of any kind, tends to be shifted from one use to another till nothing could be gained for production by any other shifting. And . . . the income from a factory . . . is governed in the same way as is the income from land. In each case the income tends to equal the value of the marginal

[7] *Ibid.*, p. 452.

[8] *Ibid.*, pp. 436-37.

net product of the agent. . . ."[9] This is a clear statement of marginal theory in the short run and would make land rent as price-determining from the point of view of the individual producer as any other variable, for certainly land which is variable in the short run will be variable in the long run.

In whatever manner Marshall may have intended these statements, it is clear even on Ricardian premises that land rents do affect price in the case of those industries where the least efficient producers of a commodity must pay rent due to the competition of firms producing other products such as the "traders" referred to in footnote 7. In that case the pressure of others who desired to use the land eliminated all but the strongest traders who, to keep their places, had to pay the higher rent. This was possible because of the failure of the weaker traders, whose withdrawal affected a reduction of supply of certain commodities resulting in higher prices. It might be said that, as the price of land increased, the *industry* was forced to let some land go until the "marginal productivity" of the land was as high as its rent.

Another example in which all fixed elements are of positive value may be found in Marshall's discussion of meteoric stones where he identifies the case where the stones "cannot be worn out or destroyed, and no more can be found"[10] with the rent of the land. He then says that they will be distributed by the price system to their most important uses and that the price paid for them will indicate the value of their services at their margins of application. The implication is clear that there are no marginal or no-rent stones and that the stones must be had if the product is to be produced. Thus the price paid is a price that the individual firm *must* pay if it is to continue to have the use of the stones, and is, therefore, a payment that must be made from the sale of the product produced with the aid of the stones if the "rent" is to be effective in allocating the stones to their most important uses. But Marshall does not draw this conclusion. Instead he turns to the point that it does not matter who receives the rents so far as the productivity of the stones now or ever is concerned. In other words, he turns at once from the individual to the social point of view and to matters of tax policy, both of which are related to real rather than opportunity costs. We shall come back to this shift in a moment, but first it may be well to inquire into the prevalence of the situation where the least efficient long-run producer must pay rent. At the moment we must note that, however correct his analysis of tax policy may be, it in no way disproves the possibility of commodity prices which are affected by the payment of rent.

[9] *Ibid.*, p. 535.

[10] *Ibid.*, p. 418.

Mill apparently decided that rent typically raised the price of manufactured, though not of agricultural, products.[11] The present author has difficulty in conceiving of any industry which does not find rent affecting the price charged by the "marginal," and hence all, firms. Certainly all retailing is carried on in areas where the worst usable locations are "superior" sites for hotels, apartments, or residences. Moreover, land to be put to any urban use must yield as much as the agricultural use that might be made of it, and this is almost certain to be positive near a city. Likewise "marginal" dairy land is likely to be superior for fattening animals, and land "marginal" for this purpose "superior" for growing certain grains or fibers, and this land is probably superior for stock-raising, and so on. Some sheep are raised on the public domain, and with them we may find a product which is raised in part on no-rent land and which, therefore, need cover only labor and capital costs to retain its marginal suppliers in the long run. But even in this case we discover that the sheep are shorn and wintered in the lowlands where the land has alternative uses.[12]

In the case illustrated above, where—due to a scarcity of land suitable for certain uses—*all* competing producers must pay rent, an element heretofore passed over in this paper has been made explicit. So long as all producers had the practical alternative of using no-rent land, rent might properly be thought of as not belonging in the group of opportunity costs "entering into" the price of commodities. The full rent was then a "surplus" both from the viewpoint of price-determination and that of real costs of production, although its payment was unnecessary to secure the proper allocation of land. Now it seems clear that *part* of the return to land usually affects price; namely, that part equal to the average cost of land to the marginal producer of any product.

Marshall apparently never quite understood the problem in this manner and when he tried to answer Jevons on this point Marshall shifted his ground so as to make the parcel of land under discussion much more profitable in one use than in another so that there was no "simple numerical relation between the surplus, or rent, which the land would yield under oats and the marginal costs which the prices of hops must cover."[13] He then seems to assume that some of the units of the

[11] J. S. Mill, *Principles of Political Economy,* Ashley ed. (London, Longmans Green, 1909), p. 468.

[12] Among others, Gustav Cassel has made a good deal of this point in his *The Theory of Social Economy,* translated by S. L. Barron (New York, Harcourt Brace, 1939), pp. 287-88.

[13] Marshall, *op. cit.,* pp. 436-37.

product yielding the highest rent on this particular parcel of land is grown on a no-rent margin.[14]

Thus Marshall seems to contend that the price of a product will rise if the producers cannot pay rents high enough to retain certain lands due to the application of their labor and capital to less productive soils. In this way, although prices rise, no rent is included in the cost of the marginal units raised. Land, therefore, *need* not even be a supplementary cost since in the long run a firm may move to no-rent land. But this argument of Marshall's misses the mark. It is not enough to say that price is increased because the factors are forced to work poorer land. This may be true, but in the case under discussion it is also presumed that producers of many products will find that the least productive technically available land is scarce and commands a rental. In that case the producer does not have the alternative of moving to no-rent land, but only to this land which is worth a certain minimum rental. And this much, at least, must now be counted among the supplementary costs and must be covered in the long run. By a simple extension of this argument all payments necessary to keep certain parcels of land in a given industry will become supplementary costs and this will raise the normal price of most goods to a level higher than that which would prevail if land were free.[15]

[14] See F. S. Oglivie, "Marshall on Rent," *Econ. Jour.*, Vol. 40 (1930), p. 1-24. This is not the interpretation given by Professor Oglivie to this passage. He seems to hold the opinion that since Marshall went on to say ". . . if for the purposes of a particular argument we take together the whole expenses of the production on that [rent-bearing] land, and divide these among the whole of the commodity produced; then the rent which we ought to count in is . . . that which it . . . [pays] when used for producing . . . [wheat]." P. 437n. Marshall admitted the crux of the arguments, against his position. But Marshall never denied the existence of rent, nor that firms on economically scarce land must pay rent. What he did say was that rent does not enter the calculations of the producer because the producer thinks of land as being fixed. This statement is in line with this view and yields nothing to the marginal productivity analysis. See also M. T. Holland, "Marshall on Rent—A Reply," *Econ. Jour.*, Vol. 40 (1930), p. 36, for a still different defense of Marshall's position. See also G. J. Stigler, ***Production and Distribution Theories*** (New York, Macmillan, 1940), p. 94. The interpretation given here, although based on quality of the product, yields a conclusion similar to ours.

[15] Some may argue that this presentation ignores the basic consideration. It has been widely taught that the main issue is a matter of what is cause and what is effect, and that at least under conditions of increasing short-run average cost, prices must rise or fall *first* and rents then adjust themselves. This is logical enough when attention is paid to a single industry in which competing firms operate. But if as a result of a rise in the price of hops the rents on hop-lands rise, diverting land suitable for growing either hops or wheat to hop production, what will be the effect on wheat prices? Clearly, the acreage in wheat will be reduced, the supply of wheat will be shorter and prices higher in that order. The "final" cause of higher wheat prices, while not apparent, lies in the factors that raised the price of hops, but the immediate cause was a rise in the rent of wheat land which resulted in a reduction of supply, hence higher wheat prices. If the validity of this is admitted, then it becomes apparent that generalizations as to "price-determining" *vs.*

It seems inevitable, then, that rents, or at least part of them, do "enter" opportunity costs and do usually result in higher equilibrium prices. This does not make rent a social cost, however, and it therefore destroys the harmony between social and private costs so earnestly sought by Marshall.

We cannot pretend, as Smith, Ricardo and Marshall would have us, that all of "price-determining" cost must be accounted for by labor, past and present. It may be "wicked," as Edgeworth puts it, to come to this conclusion, but it is unavoidable.[16]

Two Theories of Rent are Required

It is proper to turn to real cost analysis, as Marshall does, in order to escape these conclusions if one is dealing with justice in taxation and similar problems. But in doing so one definitely leaves opportunity costs behind. The real cost concept is not a harmonious section of a single theory of rent which may be used to analyze social matters, but involves a separate theory based on real costs. Money costs, based on opportunity costs, yield a grossly distorted image of real costs.

To say this is in no way to detract from the value of the analysis of real, or social, costs. The "costs" which especially concerned Marshall are not the opportunity costs of the producers which we have been discussing, but are, rather, "the exertions of all the different kinds of labor that are directly or indirectly involved in making it; together with the abstinences or rather the waitings required for saving the capital used in making it: all these efforts and sacrifices together will be called the *real cost of production,* or, for shortness, its *expenses of production. . . .*"

Cost, then, is regarded byMarshall as being the sum of the efforts and sacrifices necessary for production.[17] Money cost is that payment neces-

"price-determined" factor-payments are not possible. The problem is not one of cause and effect, as such arguments assume, but mutual determination.

It is, of course, apparent that under competitive conditions, the price of the product will still be equal to the cost of the last dose of labor-capital. What this argument does say is that, if land is still treated as a fixed factor, it must earn a "surplus" of a certain size if the firm is to stay in the industry. This is a queer kind of "surplus," and its magnitude may be found just as easily (if land be thought of as a variable) by finding the quantity of land the cost of whose marginal dose is also equal to the price of the product under competitive conditions.

[16] Quoted in Oglivie, *op. cit.,* as appearing in Edgeworth's *Memorials,* p. 436.

[17] With such a definition of cost it is clear that Marshall's rigid insistence upon the distinction between rents and quasi-rents is quite proper. Quasi-rents involve real costs and rents do not. The supply conditions in the long run are crucial and similarity in demand factors or short-run divisibility will not alter the basic distinction. On the other hand, it is true that the supply of land can usually be reduced by literal or figurative "mining." The total return to land is typically a gross, not a net, return, and unless the proper deductions are made, the net rent may be overstated. If this occurs and more than the net returns

sary to secure the existence of adequate supplies of all qualities of the various factors of production. But land is defined as being the gift of nature and, in its basic characteristic, indestructible, although it may be severely "mined" in its subsidiary aspects.[18]

Since the author believes that the Marshallian analysis of real cost is essentially correct, and since he entertains a similar opinion about the validity of price theory based upon opportunity cost, it is desirable that some precise connection between the two be established.

The Relationship between the Two Theories

A connection between Marshall's "money cost of production," *i.e.*, the money payments associated with real costs, and the total money cost of production may be preserved by a special use of the fixed factor analysis.[19] If we classify all real costs as variables but treat all non-real opportunity costs as fixed, the "expenses of production," as defined above, are equal to the average *variable* costs and the quantity indicated by the distance between this curve and the average cost curve at any point will measure the gap between real and money costs as expressed in dollars. A major point of this paper is that such a gap is to be expected in the case of marginal as well as other firms.[20]

This comment in no way invalidates the choice of the function which minimizes social cost as described by Ellis and Fellner, but it does suggest that price on the curve "excluding rent" does in fact only partially exclude it except in the special case presented by them. The non-real cost agents of production are scarce and productive. They, too, must be allocated to their most important uses and the basic consideration is that efficient use be made of all of the scarce productive factors taken

are taxed or withdrawn from the enterprise, a wasteful use of land will result which will involve lowering the quality of the land.

[18] The basic characteristic is conceded to be its extension. The fact that "land can be ruined" simply means that the user was not content with the *net* return, but took as income some of the "asset value" in addition. Such practices are discussed under the heading of royalties and are closely connected to the theory of interest.

[19] This point was suggested by a consideration of the analysis made by H. S. Ellis and William J. Fellner in the article, "External Economies and Diseconomies," *Am. Econ. Rev.*, Vol. XXXIII, No. 3 (Sept., 1943), pp. 493-511. The author believes that the geometry used is based upon the implicit assumption that members of the industry have access to no-rent land because it shows a common origin for curves which show, on one hand, average cost including rent, β, and average cost excluding rent, δ, on the other (pp. 498-99). This is proper if land is regarded as variable or if land is regarded as fixed in quantity, but at least a small part of the total output is produced on no-rent land. The latter of these alternatives seems most proper here since the curves are relevant to a discussion of diminishing returns, apparently diminishing returns to land.

[20] This would have been clear from the diagrams of Ellis and Fellner, if, as the author believes proper, their β curve had at *all* points been greater, though by a diminishing amount, than the δ curve.

together. Since in this case only real costs are placed with marginal costs, any excess of marginal revenue over marginal cost represents a net social gain. Under equilibrium conditions the output indicated by this analysis is the same as if all factors were variable, as indicated above.[21] And these, in turn, are identical to that indicated by Ellis and Fellner.

Something more than the real costs are relevant in pricing, and social cost must recognize the loss which would result from an under-utilization of land. On the other hand, the *payments* made to the owners of fixed factors can be diverted to other uses without direct effect on production. Thus, the real cost is lower than the most desirable price from the social point of view. Social costs, as defined by Ellis and Fellner, cannot be identified with real costs except in the limiting case of industries which have access to technically useful no-rent land.

Paretian Rent and Classical Theory

We have seen how the attempted synthesis of business expenses and real costs led to certain difficulties in classical theory. We must now turn to another trouble spot in the analysis of rent.

Is rent the normal payment to land, including both surplus and cost elements, or is it just that part of the total payment comprising the surplus element?[22] Marshall's objection to the latter alternative seemed to be based on the contention that "there is no simple and numerical relation" between the surpluses raised by one product as compared to those raised by another. The Paretian conception provided an apparent answer.[23]

Pareto defines rent as equal to the *difference* between the two "surpluses." Thus there would be included in the total payment to land, as we have defined it, an opportunity cost (which affected prices and bore a "simple and numerical relationship" between the costs of two unlike products that could use the same land) plus a surplus, *i.e.*, a "rent" (which did not affect prices). This analysis has won over several influential English-speaking economists[24] who have sometimes termed the opportunity cost of land "transfer cost," to replace "rent" and quasi-rent as the principal return to fixed agents of production. "Rent," as

[21] See note 4 above.

[22] The third alternative, that it be designated as the opportunity cost element alone, will be discussed and advocated presently. It cannot be given a separate place at this point, however, since it is not a standard conception.

[23] Vilifredo Pareto, *Cours d'Economie Politique, Librairie de l'Universitie* (Lausanne, 1897), Vol. II, paragraphs 745-755 and related passages. Similar views are expressed in his later *Manual d'Economie Politique* in the section on rent. For a good treatment in English in a related vein, see Joan Robinson, *The Economics of Imperfect Competition* (London, Macmillan, 1934), chap. 8.

[24] See above, p. 261.

defined by this group, is a true surplus but one that may disappear in the long run, and which will in no case affect the allocation of resources.

But the Paretian answer goes much further than this in its implications. If analysis is undertaken at the level of the individual firms, the importance of these implications is not so apparent, especially if the standard assumptions in regard to competition are made. The differences would seem to center about the assumptions regarding alternative uses and terminology. If all units of the particular agent employed by a firm have the same alternative employments and if the difference in productivity between the best and the next best uses is infinitesimal, the Paretian rents disappear, leaving nothing but "transfer costs" which, as Wicksteed pointed out, are equal to Marshallian rents. Since many very similar firms were thought to make up an "industry" in Marshallian economics, the various agents *would* have very good alternatives within the industry, and since the productive agents were thought of as being homogeneous, all would have the same opportunity costs. In this case, incidentally, if all firms were exactly alike all of rent would "enter into" price.

But even within the framework of Marshallian economics conceptual changes would be required. Paretian rents might be zero from the standpoint of all the firms, for horizontal supply curves for the factors offered to a firm seem logical. Not so for a whole industry. The supply curve of factors for an industry usually has positive slope, making the payments to factors with the poorer alternatives greater than that required, *i.e.*, than opportunity costs, thus introducing a finite "rent" element into a situation where an analysis of the firms had revealed only infinitely small "rents." Moreover, from the social point of view, rents are higher still, since few agents can insist on much more than subsistence, which, in the case of land, is zero.

All this may be fine in so far as it introduces greater flexibility into the theoretical economic system, but it leaves rent theory in a nebulous state, with the payment of rent related to different functions by different authorities and varying drastically in magnitude according to the level of analysis used if one of the groups of experts is followed. The fact is that very different concepts are defined by the prescription of the various authors. We will discover that ideas of the various authors can be profitably synthesized. To do so, however, we must adopt a terminology as flexible and exact as the prescriptions. Let us turn to this task.

Rent Best Defined as the Opportunity Cost of Land

In the following sections we will be primarily concerned with rent as analyzed at the level of the firm rather than that of the industry. Further analysis of real costs may be left to the standard treatments. Space for-

bids expansion into the various levels intermediate to the firm and society as a whole at which "rent" might be determined, although such extension is not difficult. The author feels that the term "rent" should be applied to only one level, and suggests following Stigler's lead in the choice of terminology of the intermediary levels.[25] "Rent" may perhaps be most properly applied to the remuneration of a certain type of productive agent as the remuneration appears to the owner of the agent. This will usually depend on the opportunities available among firms, not industries.

Preference for the use of the term "rent" to refer to the opportunity cost of land may now be stated. This definition is in strict accord with the usage of neither of the groups of economists discussed above. But in no case would disruptive changes be involved. The "orthodox" economists who have thought of rent as the full payment to owners of land frequently make the assumption of homogeneity which eliminated that part of the payments which are of a non-opportunity cost character. Such economists would merely have to adopt Wicksteed's position. The other group could do their part in standardizing terminology by substituting the word "rent" where they now use "transfer cost" and adopting some new name for the group of "economic rents" which they have analyzed and which deserve a definite position in economic theory. Such a name is suggested in the following pages.

The choice of opportunity cost as a basis for the definition rests on several considerations. In the first place, it seems most in accord with common usage. To most people rent is still connected primarily with the use of durable agents rather than with surplus returns. It has come to be associated with surplus returns by professional economists largely as a result of several special arguments which can now be seen to be resting on special grounds. While there is little enough agreement of this matter of terminology within the ranks of economists, the proposed definition would probably minimize the total adjustment required to bring precision into our terminology, whether or not it were brought into accord with common usage.

Another reason for this choice is that no new name for the opportunity cost of land has been accepted. Some might say that "transfer cost" is such a name, but the author cannot recall seeing any listing of the functional shares of income that read "wages, interest, transfer cost, rent and profits."

A final reason is that the use to which the word "rent" is now being put by those who do not use it in connection with the normal returns to land seems misleading in important ways. As they use it, it is neither a

[25] See below, footnote 34.

real cost nor opportunity cost. Since many economists still think of "rent" as a major branch of distribution theory, this sort of definition tends to confuse the issues. Moreover, the fact that such rents tend to disappear in the long run makes it particularly incomprehensible to students and laymen. Yet if the payment to the various agents of production greater than that required to keep them in their present uses is not to be called "rent," what is it to be called?

True Surplus Returns to Productive Agents: Factor Profits

Paretian rents are not opportunity costs since they are defined as being the payment over and above opportunity costs. Neither are they real costs since they are payments which any agent may receive whether or not its supply, as suited to a particular use, would cease to exist if their owners were not paid. There is only one major share of functional income which is commonly thought of as having neither an opportunity cost nor a real cost character; that is pure profit. Let us then compare these surplus returns to profit.[26]

In the *Wealth of Nations,* profit was not clearly distinguished from interest. This practice, while modified by later English economists, was not changed sufficiently by them to exclude all non-cost returns until after Marshall's day, and some noted economists still regard entrepreneural returns as being composed, in part at least, of opportunity and/or real cost elements.[27]

These economists, of whom Hawtrey and Taussig are representative, seem to find repugnant the idea that a single man can be at one and the same time a salaried manager, and a receiver of purely residual profits. It is, of course, true that some business men earn much more year after year than others, and it may be tempting to speak of the greater earning of some as a "rent of ability," as Hawtrey suggests. In doing so, however, he not only uses the word "rent" in the sense of payment greater than the opportunity cost of the entrepreneur, *i.e.*, in exactly the sense which is inappropriate and incompatible with the usage advocated here, but he also seems to be saying in another way that entrepreneurs are paid according to their productivity. Any implication that they are fixed

[26] Most of the characteristics of "profit" referred to below are suggested in the chapter on profits which appeared in the book by Robert Triffin, *Monopolistic Competition and General Equilibrium Theory* (Cambridge, Harvard Univ. Press, 1941), pp. 158 *ff.*

[27] Marshall, *op. cit.*, p. 624n. It may be noted that if the manager is paid according to his ability and if insurable risks are also included in costs, the "excluded 4/5 of what are ordinarily classed as profits in England" becomes 5/5.

See also H. G. Hawtrey, "Competition from Newcomers," *Economica,* Vol. X, No. 39 (Aug., 1943), pp. 219 *ff.* It goes without saying that in this paper we have adopted ". . . what orthodox economists all over the world are teaching their students," rather than the view which he advocates in his article.

factors and receive a residual return will not affect this observation.[28]

We take, therefore, as our definition of profits that share of income left over from sales after all costs have been paid including the opportunity costs of management, insurable risks, and payments to bondholders and stockholders sufficient to maintain the investment at its current level. It seems clear that profits are as likely to be negative as positive for any firm in a "normal" year, and that in the long run for the economy as a whole profits will be zero, although there will be very wide fluctuations about this level and some firms may show profits for very long periods of time.

There seem to be several points of similarity between the surplus return of pure profits and the surplus return to certain agents of production. In the first place, neither return need be paid by a firm in order to retain the services of the agents who receive the "surplus" payments. This is true for each individual firm as well as for society, a point which distinguishes this type of return from what we have defined as "rent." Rent (the opportunity cost of land) must be paid by the firms in order to secure the agent for the firm's use. Profits and the surplus returns to some units of specific agents are also alike in that neither the specific agents nor the profit-takers *need* be fixed in quantity or location in the ordinary sense of the word. They simply *will* not change their employment if their returns are reduced even if they could so long as they are not reduced below their opportunity costs. Thus taxes that fall on either profits or surpluses of this nature will affect neither output nor price directly whether or not the taxes are uniform, *i.e.*, reach the surpluses of all competing agents or firms on the same basis.[29]

This last statement must be qualified. If pure profits are taxed, unlike the surplus returns mentioned above, it is probable that people will be less willing to become "profit-takers" since losses are likely to outweigh profits-minus-taxes. But this is a consideration that depends upon the nature of the supply of entrepreneurs[30] and, in any case, does not bear upon the problem of output and price where the entrepreneur can be called a fixed factor in the ordinary meaning of the term.[31]

[28] See page 260 above. Parenthetically, it may be added that the conception of opportunity cost seems unnecessarily restricted as it is used by Hawtrey. He apparently regards all opportunity past after the stripling youth has made his choice of profession, since his "opportunity" is what he might have expected to make in another profession. But the ordinary meaning of the term as used in America implies, on the contrary, a relatively short-run situation which would not exclude the entrepreneur, currently employing himself, from the alternative of becoming the manager of another *firm* in the same industry.

[29] The use to which the tax funds are put may, of course, affect the output and price.

[30] Such nice calculations would probably not affect the supply of entrepreneurs if their supply depends, as some maintain, upon the "sweepstakes urge" where mindful of a better-than-even chance of loss, this chance is taken to make possible a very rich gain.

[31] To avoid confusion in matters of tax policy it may be well to contrast these surpluses

Another point of similarity between "surplus rents" and entrepreneural profits is suggested by Triffin who remarks that, "[A promoter's] purpose may be sheer exploitation of the bondholders and the stockholders . . . he may innovate by creating . . . profit-opportunities for himself, rather than for the corporation. . . ."[32] In this, too, the position of the profits-taker is similar to that of owners of other factors of production who receive returns greater than their opportunity costs. Bankers when lending their funds, workers when bargaining for their contracts, suppliers of materials and buyers of the finished product are all, in theory, working for their own, not primarily for their firms' welfare—a fact that may explain the predatory actions which all groups in business occasionally display.

If one whole group of productive agents is successful in gaining special returns, their special returns will affect output and price if the marginal cost curves are affected, and their returns, although "surplus" from the social point of view, reduce output and increase prices resulting in a monopoly profit which is appropriated by the privileged group. This eventuality is possible only if the industry or firm is monopolistic. In this case a tax on such a surplus will improve matters by transferring part of the fruits of the exploitative gain to the government, which is presumed to act in the general welfare. Again this type of analysis is

with the opportunity cost of land. A uniform tax that takes the same percentage of the rent regardless of the purpose for which the land is used will affect neither the prices nor the outputs of the various goods produced with the aid of land. This conclusion follows only in the case that the tax does not change the relative position or at least the ordinal relationship of each agent; *i.e.*, is in some sense of the word "uniform." But this is true of any factor of production, *e.g.*, a uniform income tax (or a properly constructed progressive one) will leave all receivers of income in the same relative position where, at least, they can not shift so as to increase their money incomes after taxation.

It is to be noted, however, that unlike other factors, collateral effects on the physical supply of land or the extent of the use of land are avoided, since land has no real cost, with the exception of the case elaborated by K. E. Boulding ("Incidence of a Profits Tax," *Am. Econ. Rev.*, Vol. XXXIV, No. 3 [Sept., 1944], pp. 567-72), where the owners do not try to squeeze all of the rent out of their holdings. (In general, I believe that his conclusions are stronger when applied to Paretian rents, rather than profits, since one can not count on the existence of positive profits, and it is generally conceded that business men will work pretty hard to avoid losses.)

As in the case of other factors, a tax on land which is devoted only to certain uses, if impinging on opportunity costs, will result in a changed use of some of the agents. The conclusions reached in regard to the surplus returns, and profits, in contrast, have application whether or not the tax is "uniform." Any tax smaller than the surplus will fail to result in the movement of an agent of production even if only scattered and random agents are taxed and all others escape entirely. This follows since the current employment remains the only one where returns greater than the opportunity returns are available.

We can hardly afford to use the word "rent" indiscriminately in matters of tax policy when the two commonly accepted payments defined as "rent" yield such different results when taxed.

[32] Triffin, *op. cit.*, pp. 185-86.

identical to that typically used in discussing monopolistic "profits" rather than "surplus" elements in factor costs, but it appears to be appropriate.

This leads us directly to the consideration of a final point of similarity between pure profits and these surplus returns. From one point of view the surplus accruing to the individual agent *is* a profit. In a free economy each agent is responsible for finding its own employment and may be thought of as a little firm selling a productive service.[33] Any failure to follow market conditions may result in a loss (*i.e.*, receipts less than opportunity cost in the sense of next highest marginal value product) and any advantage taken of a fortuitous situation will result in profit (*i.e.*, receipts greater than opportunity costs). If "profits" or "losses" become regular and lose their apparent "unusualness," the factor may impute the gain or loss to itself, thus raising or lowering its estimate of what it is worth in accordance with what it is paid, just as the entrepreneur of a firm will so revalue his fixed stocks. In using this term "fixed stocks," the true fixity of the "stock in trade" of the individual person is emphasized. This fixity, involving as it does a non-marginal, non-real cost situation, again underlines the parallel between the situation of the individual and the entrepreneur. Indeed, the latter is in the more favorable position today in that he can escape some of the risks involved in his actions through the application of various devices of business organization.

It is true that the difference between the scale of operations of the entrepreneur of a firm and the "entrepreneur" disposing of his personal services is so great as to amount to a difference of kind. This difference is perhaps great enough to justify a different term for these surpluses which may accrue to any factor. Perhaps the term "non-cost outlay" advanced by Stigler[34] will be found to be the most suitable. Another possibility is "factor profits" as distinguished from "entrepreneural profits." Either of these terms would give the proper impression—that they are payments greater than opportunity costs to any factor of production—and their use would also avoid confusing surplus returns with the return to land.

Of the two terms, "factor profits" may prove to be the more suitable since Stigler's "non-cost outlay" is closely tied up to the industry concept. Throughout the last two sections of this paper, opportunity costs have been defined in term of alternative "jobs" which a given agent is

[33] Wicksteed, *op. cit.*, pp. 360-70, must have had something of the same thing in mind when he said that undertakers might be dispensed with and in their stead have the owners of the various productive resources spontaneously combine them, each waiting for his remuneration until the product due his agent had been sold.

[34] *Theory of Competitive Price*, pp. 105 *f.*

able to secure. Thus a movie star whose next best *industry* is selling does not show a "factor profit" embracing the difference between his present salary and his possible earnings as, say, a brush peddler, but only the difference between what he earns and what a rival studio is prepared to offer. Thus "non-cost outlay," as Stigler defines it, belongs most properly to the middle ground which we decided to eschew (see page 269).

"Factor profits" refer to the everyday level where the great majority of decisions are made which involve the allocation of resources. As such, it is the most important level on which returns necessary to retain resources in their present use can be discussed. The industry concept is not very useful here since job-opportunities cut across industry lines very freely.

Land is Preferably Treated as a Variable Factor

In the earlier discussions of this paper it seemed desirable to emphasize the identity of the results isolated using the concept of "fixed factors" and those isolated using marginal productivity analysis. Now that this need is past it is proper to point out the reasons why the author prefers to use the marginal productivity approach.

Marshall defended the concept of "fixed factors" on the ground of realism. Thus he wrote, ". . . in discussions written specially for mathematical readers it is no doubt right to be very bold in the search for wide generalizations . . . but it is not in a treatise such as the present, in which mathematics is used only to express in terse and more precise language those methods of analysis and reasoning which ordinary people adopt, more or less consciously, in the affairs of everyday life."[35]

Marginal productivity theorists usually are interested in "wide generalizations." Wicksteed, for example, who attacked Marshall most vigorously in this respect, was the first to give a demonstration of exhaustion of product by marginal productivity analysis under competitive conditions. But it seems proper to question the rôle assigned to land—and here physical characteristics, not the fixity of supply, is basic—by Marshall as he looked through the eyes of a business man. Let us assume that the *total* amount of "land" in the world is fixed. Is it the most prominent fixed factor to the individual firm?

In the United States most of our farms are what is called "family-sized." While, before the war, seasonal labor was employed during the harvests, the size of the family is an important consideration influencing the amount of land that it will attempt to work. Even where the families own their farms there is continual bargaining for the use of part of one

[35] Marshall, *op. cit.*, p. 851.

another's land. Thus the land is often more variable to the farmer than is his labor supply. On the other hand, it is likewise true that the United States merchant marine at least from the First World War until the Merchant Marine act of 1936, found its supply of ships, its capital, relatively fixed, whereas the land space required could be rented and was largely a variable factor. It may be objected that the second example is relevant primarily to the short run where Marshall agreed that capital might well be a fixed factor, but the point is not that capital is or is not fixed, but that, *from the point of view of the business man,* land may be regarded as being *more easily* varied than the supply of other factors in some important cases. If this is true, then the alleged necessity for putting rent on a different basis from wages or interest is not proved, and marginal productivity theory should be adopted, at least in certain cases, on grounds of realism as well as of theoretical beauty.

It may be that land is rigidly fixed in some employments, so that business men can not think in terms of adding or subtracting a small portion of their land even in the normal period. But this is certainly not true of farmers, and there are many business men of all kinds who rent their floor space and can easily acquire larger quarters if they so desire. From the viewpoint of a firm more of all factors can be obtained. The safest course on grounds of realism is probably to admit the validity of both types of analysis in so far as the economics of a firm is concerned, but to stress the marginal productivity approach.

Quite aside from the debatable element of realism, it should be noted that the presence of several surplus returns in the short run vastly complicates the problem of income distribution in the short run.[36] Where only one surplus return is to be determined, it can be correctly found as a residual even if it could be determined by marginal productivity; but if there are several fixed factors, resort must be made to simultaneous equations on the theoretical level, a device that seems more out of touch with business practice than marginal productivity theory.

Marshall was aware of this difficulty, but seems to have preferred to leave this problem unresolved in the short run, and only partially resolved in the long run.[37] These difficulties are especially pressing when monopolistic competition is considered, a condition in which each firm must be able to evaluate each agent without reference to any industry. Since no two firms have the same product it would be impossible to apply simultaneous equations, making the division of income among two

[36] For more detail on this problem as well as the distinction between rents and quasi-rents, see R. S. Meriam, "Quasi-rent," *Explorations in Economics* (New York, McGraw-Hill, 1936), Chap. X.

[37] Marshall, *op. cit.,* p. 626.

or more fixed agents quite arbitrary. In this case it would seem likely that costs would always be found equal to price simply because the "surplus" would be entirely imputed to land, at least in the long run, although a marginal analysis of rent might reduce it so as to indicate a high monopoly or other profit. In other words, a factor profit might displace the entrepreneural profit simply because of a lack of precision of analysis. The use of marginal analysis seems to be the best way out of this impasse.

Finally, the marginal productivity theory avoids the welter of special issues which have impeded clear thinking for so long. All elements of cost, at least those which must be positive, are placed on the same basis. So far as the allocation of resources is concerned, what is true of one is true of another. And the true significance of real cost can be stated with vigor, albeit separately, without a fallacious and unconvincing argument which attempts to identify real costs and prices.

Two major difficulties involved in rent theory have been considered above. The first is the unfortunate result of a mistaken attempt to synthesize incompatible doctrines of cost, the second is a disagreement as to the essential characteristic of rent. Both of these difficulties should and can be overcome. One method for doing so has been proposed.

BUSINESS CYCLES AND THE MODERN THEORY OF EMPLOYMENT

By LLOYD A. METZLER*

I. *The Propensity to Consume in Business Cycle Theory*

The modern theory of employment and income, which explains the level of total output in terms of investment and consumption, is generally regarded as a static theory. It is widely believed that the propensity to consume and the level of investment provide a broad explanation of the *level* of total economic activity achieved by an economy in equilibrium, but do not account for *fluctuations* in such activity.[1] In the study of cumulative processes of expansion and contraction—prosperity and depression—most economists feel that the popular discussion of savings and investment must be supplemented by other methods of investigation. When prices and production are rising or falling, for example, the effects of changing expectations upon the output decisions of business men must be taken into account. This means, among other things, that the rates of change of prices and sales are important factors in the volume of total production.

The "multiplier" explanation of output and employment has frequently been criticized on the ground that it neglects these dynamic aspects of economic activity.[2] To some extent, the criticism is probably justified, for much of the present analysis of income and employment consists simply of static supply and demand relations. Nevertheless, in concentrating on the static character of the multiplier, it is easy to lose sight of the fact that the basis of this multiplier—the marginal propensity to consume—not only provides a static explanation of the equilibrium level of employment but also supplies the framework for important extensions of the theory of business fluctuations. In other words, the development of the static theory of employment has been

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[1] See, *e.g.*, Gottfried Haberler, *Prosperity and Depression* (Geneva, 1941), p. 168.

[2] Much of the criticism was due to the fact that no distinction was made, in the theory expounded by Lord Keynes, between intended and unintended components of savings and investment. As a result of this lack of precision, the theory that the level of income is determined by the condition that savings shall be equal to investment seemed either false or tautological when applied to dynamic problems. See Haberler, *op. cit.*, chap. 8; Fritz Machlup, "Period Analysis and Multiplier Theory," *Quart. Jour. Econ.*, Vol. LIV (Nov., 1939), p. 1; Friedrich A. Lutz, "The Outcome of the Saving-Investment Discussion," *Quart. Jour. Econ.*, Vol. LII (Aug., 1938), pp. 611-14.

accompanied by corresponding changes in the theory of business cycles.

The changes in business cycle theory are of two sorts. First, the modern theory of employment establishes a definition of a norm about which the economic system fluctuates: at any given time, the equilibrium level of income is the level at which intended savings are equal to intended non-induced investment. Business cycles consist simply of fluctuations about this norm or equilibrium. It is true, of course, that this definition of equilibrium presents a number of serious statistical problems. Difficulties arise, for example, in distinguishing between induced and non-induced investment. Despite the statistical problems, however, the establishment of a conceptual normal level of activity constitutes an important advance in the theory of economic fluctuations. In the absence of this norm, it has been necessary in the past either to rely upon purely empirical concepts of equilibrium or to assume that the system tends automatically toward full employment and that any deviation from full employment is, therefore, an evidence of disequilibrium.

Both of these alternatives are clearly inadequate. The first is inadequate because the usual empirical distinction between secular trend and cyclical fluctuations about the trend cannot be justified without an explanation of the trend itself; a mere fitting of a curve by "least squares" or other methods does not suffice to establish the nature of the trend movements.[3] The second alternative—a norm of full employment—is inadequate because it is now clear that income may be in equilibrium at a level of output considerably below full employment. The modern theory of income and employment, by providing a concept of an equilibrium level of employment, thus fills a serious gap in the study of business cycles.

The second important contribution of the theory of employment to business cycle analysis is in the explanation of turning points of the cycle. Prior to the development of the concepts of propensity to consume and propensity to save, an explanation of these turning points was perhaps the most difficult task of business cycle analysis. Traditional theory usually assumed that the economic system is inherently unstable in the sense that a slight upward or downward movement of income and employment tends to initiate a cumulative and self-reinforcing process of expansion or contraction. In other words, it was commonly believed that an initial increase of income, employment, and prices would stimulate a further increase, and that income would continue to rise at an accelerated rate until the limits of possible expansion were reached, or until some outside force put a stop to the cumu-

[3] Edwin Frickey, "The Problem of Secular Trend," *Rev. of Econ. Stat.*, Vol. XVI (Oct., 1934), pp. 199-206.

lative process.[4] The converse of this argument is, of course, that a slight downward movement is also self-aggravating, and that a depression, once started, tends to continue until some factor or factors which operate only at low levels of employment reverse the movement.

Traditional business cycle theory thus conceived of the economic world as a world subject to cumulative upward and downward movements as a result of relatively small disturbances. From this conception, it followed that an explanation of the cycle was to be found in the factors which reverse the direction of the cumulative movement. Once a process of expansion or contraction was started, it was widely believed that an explanation of further movements in the same direction was relatively simple. In an expansion process, for example, the rise of income was believed to be reinforced by optimistic expectations as well as by the effect of higher demand upon the output of investment goods (the acceleration principle). And since Say's Law (supply creates its own demand) was generally accepted, it was difficult to see how producers' expectations, in the aggregate, could be disappointed. While particular industries might suffer from overproduction, this would be offset by increased demand in other industries. The cumulative movement of income and prices was thus regarded as an obvious process; the real difficulty lay in an explanation of the turning points.[5]

To explain how a process of expansion is stopped and a depression initiated, economists usually introduced certain limiting factors which become operative only at high levels of economic activity. It was frequently asserted, for example, that a period of prosperity and rising income is brought to a close by the inability of the banking system to make additional loans. Faced with a declining reserve ratio as a result of previous loans and as a result of cash drains to support a higher volume of transactions, the banks become reluctant to make further loans. Interest rates rise and a period of credit contraction ensues. By reducing the level of total demand for goods, this credit contraction brings all of the forces of cumulative contraction into play, and the level of output declines. Thus, according to this view, the immediate

[4] The classic example of such an unstable economy is given by Wicksell, in his description of the cumulative change in prices which results from a discrepancy between the real rate of interest and the bank rate. See Knut Wicksell, *Interest and Prices* (translated from the German by R. F. Kahn, London, 1936), chap. 9. While the cumulative process envisaged by Wicksell is a movement of prices and not of output or employment, unstable systems involving output may also be found in the writings of nineteenth-century economists. See, for example, the discussion by Pigou of a quotation from Walter Bagehot's *Lombard Street* in which Bagehot argues that a decline in output in one industry spreads through other industries in a self-reinforcing sequence of reduced demands. (A. C. Pigou, *Employment and Equilibrium* [London, 1941], p. 236.)

[5] Compare Jan Tinbergen, "Econometric Business Cycle Research," *Rev. Econ. Stud.*, Vol. 7, No. 2 (Feb., 1940), pp. 81-85.

cause of the crisis was the inflexibility of the banking system. Alternatively, the cause of the downturn was frequently found in a shortage of certain factors of production which made a continuation of the expansion process impossible. If the rise of output in certain segments of the economy were brought to a halt through the appearance of bottlenecks, it was widely believed that this would lead to a decline in total output through the operation of the acceleration principle.

At the other turning point, when depression ends and a revival begins, economists were much less certain about the immediate cause of revival. In some cases, the upturn was attributed to a resumption of investment activity induced by an accumulated shortage of equipment. In other cases, more liberal lending policies by the banking system were believed to be the immediate cause of recovery. And in still other cases, the revival was attributed simply to a return of business confidence and to more optimistic expectations in general. But whatever the immediate cause of revival, the important fact is that in traditional business cycle theory it was thought to be necessary to introduce limiting factors which brought the period of cumulative contraction to a close.

Like all brief generalizations, this explanation of traditional business cycle theory is no doubt an oversimplification. The problem is so complex, and the explanations which have been given for the cycle are so numerous, that no short summary could possibly be complete.[6] For this reason, the foregoing discussion is not to be interpreted as a summary of traditional theory. It is intended, rather, to point out one feature which most theories had in common: *The failure to develop explicitly the relation between consumption and income frequently gave an exaggerated appearance of instability to the economic system.* This led to a preoccupation with the causes of the turning points of the cycle, and to the introduction of limiting economic forces which were assumed to be operative only in periods of high prosperity or extreme depression.[7] Thus the acceptance of Say's Law, either explicitly

[6] One of the best summaries of the state of business cycle theory prior to the development of the theory of employment may be found in Alvin H. Hansen, *Business Cycle Theory* (Boston, 1927), chap. 8. Professor Hansen pointed out that, despite the diversity of opinion concerning business cycles, there was a fair amount of agreement with respect to three points: (1) the factors instigating an expansion or contraction; (2) the nature of the cumulative process; (3) the self-limitation of expansion or contraction. The most controversial and least convincing arguments in this summary were those advanced in explanation of the turning points, which were essentially the same as those mentioned in the text above.

[7] An important exception to this statement must be made for the theory of Professor Schumpeter (Joseph A. Schumpeter, *Business Cycles*, Vol 1 [New York, 1939]). Professor Schumpeter repeatedly emphasizes the significance of the norm about which the economy fluctuates, and holds that, when this norm is clearly defined, the turning points

or by implication, frequently disguised the structural nature of cycles, and created the impression that the turning points were largely due to special factors.

From this point of view, explicit recognition of the relation between income and consumption was an important development. When the concept of a propensity to consume was introduced, the economic system was recognized as an essentially stable system which is subject to more or less regular oscillations about a moving equilibrium. The turning points of these cyclical oscillations were then frequently found to be no more difficult to explain than the cumulative processes of expansion and contraction. In other words, the entire cyclical process was recognized as a process of adjustment to irregular disturbances of the system. The turning points of the cycles, like the periods of expansion and contraction, were seen to be inherent in the structure of the system, and were no longer regarded as dependent upon limiting factors such as an inflexible banking system or the appearance of bottlenecks.[8]

This does not imply, of course, that cyclical movements of income and employment are the result of a single cause, or that a single cyclical movement can be isolated as "the" business cycle. On the contrary, most recent studies of business cycles have emphasized the complexity of the actual economic system, and have shown that oscillations of income about equilibrium may consist of a number of cycles of different lengths superimposed upon each other. Individual cycles have been attributed, for example, to the demand for producers' equipment, to the demand for housing, and to the demand for inventories. All of these cycles were of course known in a general way before the theory of income and employment had been developed. Nevertheless, a clear understanding of the nature of the cyclical processes was not obtained until the theory of employment provided a concept of equilibrium. Prior to that time, it was usually found that the derived demand for such things as producers' equipment and inventories provided theories of unstable or cumulative processes, but not of cyclical movements. Turning points in these processes could be explained only by introducing new factors. Development of the theory

require no special explanation. His conception of a normal level of activity differs from the one accepted in this paper, however, in that it assumes full employment, apart from certain monopolistic restrictions.

[8] See, *e.g.*, the discussion of the acceleration principle in the *Journal of Political Economy*, Volume XXXIX (1931): Ragnar Frisch, "The Interrelation between Capital Production and Consumer-Taking," (Oct., 1931), pp. 646-54; J. M. Clark, "Capital Production and Consumer-Taking—A Reply," (Dec., 1931), pp. 814-17. The advance in business cycle theory brought about by the theory of employment is clearly seen by comparing these earlier writings with later work on the same subject, such as P. A. Samuelson, "A Synthesis of the Principle of Acceleration and the Multiplier," *Jour. Pol. Econ.* (Dec., 1939), pp. 786-97. See also, R. F. Harrod, *The Trade Cycle* (Oxford, 1939).

of employment changed all this by showing, first, that the economic system is probably a stable system, and, second, that cyclical movements of income, employment, and prices are inherent in the nature of the system, and do not depend upon special circumstances.

The importance of the modern theory of employment in business cycle analysis is well illustrated by recent changes in the theory of inventory cycles. I turn now to a consideration of these developments.

II. *The Theory of Inventory Cycles*

In the period which preceded the development of the theory of employment, the most extensive discussion of inventory cycles was that of Mr. R. G. Hawtrey. It is well known that Hawtrey regards the attempts of business men to increase or decrease their inventories as the principal cause of economic expansion and contraction. In this respect, his analysis of business cycles differs from that of most other economists, who usually consider inventory fluctuations as one among many such causes. Nevertheless, from one point of view, the Hawtrey analysis is typical of the business cycle studies which preceded the modern theory of employment: his theory is essentially a theory of cumulative processes of expansion and contraction, and the turning points in these cumulative processes depend upon certain limiting factors which become operative only in periods of high prosperity or deep depression.

The essential feature of the Hawtrey theory is a slightly qualified acceptance of Say's Law. In one explanation of his theory, he says:

> The money of which demand consists is provided directly or indirectly from people's incomes. The total of the incomes which people in any community have to spend I call the *consumers' income;* the total which they do spend I call the *consumers' outlay*. Consumers' income and consumers' outlay tend to be equal. The means of payment (comprising money and bank credit), which people have on hand, I call the *unspent margin*. Consumers' income and consumers' outlay can only differ in amount when the unspent margin changes.
>
> The term consumer as here used must not be interpreted too narrowly. People spend their incomes not only on consumable products, but on investment. "Consumer" must be regarded as including "investor" and the consumers' outlay as including investment. For money invested is *spent*. It is spent on capital goods.[9]

With this conception of total demand, it is easy to see how a small disturbance may start a cumulative process of expansion or contraction. Suppose, for example, that business men decide to increase their inventories. In order to do so, they must produce more than they expect to

[9] R. G. Hawtrey, *Trade and Credit* (New York, 1928), pp. 83-84.

sell. But in expanding output, the business men also expand income by the same amount. Hawtrey argues that this increase of income is either spent on consumption or saved, and that most, if not all, of the added savings constitute a demand for capital goods. Considering both the demand for investment goods and the demand for consumers' goods, total demand therefore increases *pari passu* with the increase of income. As a result, producers find that their attempt to increase inventories has been frustrated by a corresponding increase in demand. Their subsequent production plans include not only a level of output sufficient to satisfy the higher demand, but also an additional output for inventories. Again, however, demand is increased by the higher level of output, and inventories remain low despite attempts of business men to increase them. Thus a cumulative process of expansion is set in motion, and continues as long as business men attempt to increase their inventories.

A similar argument is applicable to the process of contraction. When business men attempt to reduce inventories by producing less than they expect to sell, they find that their total sales are correspondingly reduced, and inventories remain unchanged. "The dealers want to diminish their stocks of goods, but, when they restrict the orders they give to producers, the consumers' outlay falls off, and their sales are so reduced that their stocks are little diminished."[10]

Acceptance of Say's Law thus leads to a conception of the economy as an unstable system in which a slight contraction leads to further contraction, and a slight expansion sets off a cumulative upward movement. Mr. Hawtrey's theory is less extreme than this, for he allows total demand to differ from total output to the extent that there is a change in the unspent margin. When production and income are increasing, this means that the increase in demand is slightly less than the increase in the value of output, since a small part of the new income will be added to idle balances. In discussing the effects of expansion, Hawtrey says:

> A little of the [added] money would remain behind in balances, for a man whose earnings are increased would hold on the average somewhat larger amounts of cash in hand than before; but probably much the greater part of the additional income is immediately in one way or another spent. . . .
>
> . . . The net effect in increasing stocks will [therefore] be limited to so much of this income as is kept in hand by the recipients in balances.[11]

An increase in unspent balances constitutes a leakage from the stream of income, and if carried to its logical end, analysis of this

[10] *Ibid.*, p. 93.
[11] *Ibid.*, pp. 91-92.

leakage might, with modifications, lead to a theory of inventory cycles which does not differ substantially from the modern theory. Despite this fact, it is obvious from his writings that Mr. Hawtrey envisaged an unstable system. At one point, in fact, he speaks of the credit system as "inherently unstable." And throughout his writings he discusses "vicious circles" of expansion and contraction. In Hawtrey's opinion, these periods of expansion and contraction are brought to a close by changes in the credit policy of the banking system. During a period of rising income and prices, the banks find their cash reserves diminished both by an increase in deposits and by a drain of cash into circulation. Hawtrey argues that sooner or later the reduction of their reserves forces the banks to restrict credit. This means, among other things, that interest rates tend to rise, and with higher interest rates the carrying costs of inventories are considerably increased. Traders attempt to economize by reducing their inventories, and, as a result, the cumulative process of contraction described above is set in motion. During the period of contraction, debts are gradually liquidated, bank deposits are reduced, and cash flows back into the banks as a consequence of the decline in income and prices. Eventually the increased liquidity of the banking system leads to lower interest rates and to more liberal lending policies in general. Finding their carrying costs reduced, traders decide to hold more inventories, and a period of economic expansion ensues.

The foregoing description of Hawtrey's theory of inventory cycles is intended primarily to emphasize the assumption of instability which is inherent in this theory. Hawtrey envisages an economic world in which a slight expansion or contraction leads to further expansion or contraction in a cumulative process which is reversed only by the action of the banking system. In discussing the end of a period of prosperity, he says:

> . . . If the restriction of credit did not occur, the active phase of the trade cycle could be indefinitely prolonged, at the cost, no doubt, of an indefinite rise of prices and an abandonment of the gold standard.[12]

This point of view, as noted earlier, is a logical consequence of Say's Law of Markets. If the proposition is accepted that supply creates its own demand, which means that savings constitute a demand for capital goods, then it is obvious that production cannot outrun demand, for any increase in output will be accompanied by a corresponding increase in demand. It follows that any attempt by business men to increase their inventories must lead to a cumulative process of expansion, while every attempt to reduce inventories must result in cumulative con-

[12] *Ibid.*, p. 98.

traction. Thus Hawtrey's theory of inventory cycles is intimately connected with the classical proposition that general overproduction is impossible.

It is hardly necessary to point out that Say's Law of Markets is no longer a widely accepted economic doctrine. One of the principal achievements of the modern theory of income and employment was to emphasize that savings do not constitute a demand for capital goods; in large part, they constitute simply a demand for legal evidences of wealth, such as stocks, bonds, and savings accounts. A substantial portion of the demand for investment goods comes from business men, and is not directly related to the level of income. It is therefore entirely possible, indeed at most times probable, that an increase in total output will increase the total supply of goods more than it increases total demand; some of the increased income will be used in the purchase of previously-existing assets, and will not represent a demand for currently-produced goods. Hence, general overproduction is a possibility which must be taken into account.

If Say's Law of Markets is rejected, what happens to the theory of inventory cycles presented above? A partial answer to this question may be found in an earlier paper, in which I developed a simple theory of inventory cycles based upon the modern theory of employment.[13] The assumptions in that paper with respect to the behavior of business men were very similar to those of Mr. Hawtrey. It was assumed, for example, that business men make production plans in anticipation of future sales, and that anticipated sales depend partly upon the present level of sales and partly upon the rate of change of such sales. It was assumed further that the amount of inventories which business men desire to hold is related to the level of their sales. The theory of inventory cycles which I developed differs from Hawtrey's theory primarily in its rejection of Say's Law. In place of the proposition that supply creates its own demand, I substituted the proposition that only a part of total demand is directly related to the level of income. In other words, it was assumed that income receivers use part, but not all, of their increments of income in the purchase of commodities, and that income which is used to purchase legal evidences of wealth does not represent a demand for current output.

To simplify the discussion, the interval of time under consideration in my analysis was divided into "production planning periods," and it was assumed that the rate of output in each planning period is determined at the beginning of the period and remains unchanged until the beginning of the next period. The economy was divided into consumers'

[13] Lloyd A. Metzler, "The Nature and Stability of Inventory Cycles," *Rev. Econ. Stat.*, Vol. XXIII (Aug., 1941), pp. 113-29.

goods industries and investment goods industries, and it was postulated that within any given planning period the demand for consumers' goods depends upon the level of total output during that period. Finally, the assumption was made that the demand for all investment goods is autonomous, in the sense that it is taken as a given factor in the situation, independent of the level of income. This last assumption is obviously not necessary, since the induced demand for investment goods may be included with the demand for consumers' goods in a general "propensity to spend." Nevertheless, it will simplify the subsequent analysis without altering the final results if we retain the assumption that all investment (except inventory investment) is non-induced or autonomous.

With these assumptions, it is possible to follow through the sequence of events in a typical inventory cycle. Suppose that the economy is initially in equilibrium, in the sense that the total output of goods and services is equal to the total demand for such goods and services. Consider what happens when this equilibrium is disturbed by an increase in the demand for and supply of non-induced investment. Although equilibrium is reëstablished in the investment industries (since demand and supply increase in the same proportion), producers of consumers' goods find their stocks depleted by the increase of income and demand. This is characteristic of the early prosperity phase of an inventory cycle; producers are unable to adjust their output immediately to the increase in demand, and stocks therefore decline. In subsequent periods, production plans are revised upward, for two reasons: (1) to meet the anticipated higher level of demand; (2) to replenish depleted inventories. As output is increased, total demand also rises, and business men find that their stocks remain abnormally low despite their efforts to increase them.

Up to this point, the description of inventory cycles closely resembles Mr. Hawtrey's theory; the rise of income and employment induced by the attempts of business men to expand their inventories has much in common with the cumulative expansion envisaged by Hawtrey. Nevertheless, there is an important difference between the two theories: Hawtrey assumes that in the absence of outside influences the cumulative expansion could continue indefinitely, whereas in the present theory the expansion itself sets up conditions which make a later decline inevitable. It is true that as income rises, total demand also rises, but the increase in the latter is smaller than the increase of total output. Inventories therefore begin to accumulate slowly, although actual additions to stocks are smaller than producers intend them to be. Even when income has risen to a level appropriate to the new level of non-induced investment, however, inventories remain abnormally

low. This means that total income must rise still further, since business men attempt not only to produce enough to satisfy the higher demand at the new equilibrium but also to produce an additional amount for replenishing their depleted inventories. In other words, in the process of expansion from the old equilibrium to the new, output and employment inevitably "overshoot the mark."

Once the level of income has risen above its new equilibrium, a subsequent decline is inevitable. The inflated level of income is sustained and increased only by investment in inventories, and such investment cannot be continued indefinitely. As income rises, inventories also rise, and this process continues until a normal relation between inventories and expected sales is established. Thereafter, business men plan no further increases in stocks; they attempt, instead, to produce only what they expect to sell. Since production plans in earlier periods included production for stocks as well as for sale, the decision to produce only for sale means an absolute decline in total output. As a result, income in the hands of consumers declines, sales are reduced, and a period of general contraction develops. The contraction is accelerated by the fact that sales fall below expectations, since this causes inventories to become abnormally large and business men therefore reduce output still further in an attempt to restore their stocks to a normal level.

In the early stages of depression, inventories continue to rise despite attempts to reduce them. In other words, the contraction of output is more than offset by an induced contraction of sales. For a time, the attempt to reduce inventories is therefore self-defeating, serving merely to accelerate the downward movement of output and income. When output and employment have declined to the normal or equilibrium level at which savings are equal to autonomous investment, commodity stocks are still abnormally high. It follows that a further decline is inevitable, since business men will continue to reduce output in an attempt to dispose of their excess stocks. Thus income falls below equilibrium in the downward phase of an inventory cycle, just as it rose above equilibrium in the prosperity phase.

The downward movement cannot continue indefinitely, however, for eventually the business men will succeed in reducing their stocks. To explain why this is true, it is convenient to refer again to the static theory of employment. The fact that income receivers spend only part of their incomes means that, as output declines, the induced reduction of sales is smaller, in absolute amount, than the decline of output. Inventories are slowly reduced, and in subsequent periods the gap between production plans and expected sales is correspondingly narrowed. In other words, when the business men find their stocks de-

clining, they are relieved of the necessity of planning large stock reductions in the future, and can make their production plans more nearly in accord with what they expect to sell. Income continues to fall, since some further reduction of stocks is still considered desirable, but the *rate* of decline is arrested.

The downward movement continues, at a reduced rate, until inventories have fallen to their normal level, in relation to sales. At this point, business men plan no further reductions in stocks. Since production is now equal to expected sales, whereas in earlier periods it was less than sales, it follows that income must begin to rise. Thus the mere fact that inventories have fallen to a normal level is sufficient to account for a turning point in the cycle from depression to recovery.

The cycle is now complete. I have explained how the prosperity phase of an inventory cycle inevitably leads to a crisis and to depression, and how the depression must be followed by a period of prosperity. The self-perpetuating character of such cycles is thus established. When the equilibrium of income is disturbed, output and employment tend to fluctuate about a new equilibrium in a series of damped cycles. In describing these cycles, nothing has been said about the influence of the banking system or of other limiting factors. The turning points of the cycle do not depend upon such things as changes in credit policy or bottlenecks in the supply of resources. In the prosperity phase of the cycle, for example, it is not necessary to assume a policy of credit restriction in order to show how prosperity leads to a crisis and to depression. The crisis is inherent in the nature of the expansion process, since this process invariably raises output above the stationary or equilibrium level. An analogous argument holds for the depression phase of the cycle. As income falls below equilibrium, inventories are gradually reduced, and this is sufficient to account for a revival, quite apart from changes in bank policy or changes in the supply of resources.

Thus, the cycles described above are distinguished from Mr. Hawtrey's inventory cycles primarily by the nature of their turning points. Inventory cycles, in the present theory, are inherent in the structure of production and sales, whereas Hawtrey envisages the turning points as a result of credit policies and cost changes which become operative only in the extremes of prosperity and depression. The present theory can easily account for mild but persistent fluctuations of income about a moving equilibrium, even with no changes in credit policy, wage policy, or conditions of employment. By contrast, the Hawtrey theory speaks of "vicious circles" of expansion and contraction, which can be reversed only by the influence of limiting factors. In Hawtrey's theory, the length of a period of expansion is governed largely by the flexibility of the banking system and by the extent of unemployment

when the expansion begins; the expansion is not brought to a close until the banks are forced to restrict credit. In the present theory, on the other hand, it is necessary to explain the length of the average cycle in terms of factors which are a part of the process of production and sales. While changes in banking policy may play some part in the turning points of the cycle, much greater emphasis is placed, in the present theory, upon the relation of output to sales, and upon the relation of sales to production plans.

III. *Conclusion*

The changes in the theory of inventory cycles described above are typical examples of recent changes in business cycle theory in general. They illustrate the far-reaching influence which the theory of employment has exerted upon dynamic economics. As a result of these developments, the Wicksellian concept of an unstable cumulative process which was formerly the basis of many business cycle theories has in large part been replaced by the concept of oscillation about a normal or equilibrium level of income and employment. The normal level itself has been more clearly defined than was possible at an earlier date, and the relation of the actual level of income to this norm has assumed increasing importance.

While the cycles described by theories such as the theory of inventory cycles are conceptually perpetual, in practice they are probably highly damped. In the absence of disturbances to the underlying conditions of equilibrium, such cycles would tend to disappear. Moreover, the amplitude of any given cycle is directly related to the size of the initial disturbance. Small disturbances produce only small cycles, which means that large cyclical movements can be explained only by explaining the large initial disturbances. From this point of view, the cycle theories described in the present paper are incomplete. They explain how the economic system adapts itself to changes in the conditions of equilibrium, and give strong reasons for believing that the process of adaptation will be cyclical, but they do not explain the disturbing factors which initiate the cycles. In the words of Professor Schumpeter, they are "waves of adaptation."[14]

A wave of adaptation may be started by a change in any of the economic relations which determine the equilibrium level of income and employment. Changes in consumer tastes, for example, or in methods of production, may upset an existing equilibrium and lead to cyclical movements about a new equilibrium. It seems likely, however, that a very large proportion of actual business cycles has been initiated

[14] Schumpeter, *op. cit.*, pp. 179-80.

by disturbances in the willingness of business men to invest. The ultimate cause of cyclical fluctuations must, therefore, be sought in the investment motives of the business world, or, in other words, in the causes of a fluctuating propensity to invest. But this complex problem is beyond the scope of the present discussion. In describing cycles of adaptation, and in comparing present theories of such cycles with earlier theories, changes in the propensity to invest have simply been accepted as disturbing factors to which the economic system eventually adapts itself. A complete explanation of all movements of income, prices, and employment would of course have to include an explanation of these disturbing factors, as well as a discussion of the adaptation process described above.

DEBT MANAGEMENT AS AN INSTRUMENT OF ECONOMIC POLICY[1]

By Henry C. Wallich*

The popular view of the post-war debt seems to be that it is a heavy burden (that is, a restrictive force) and that at the same time it is inflationary (an expansive force). This view is perhaps not as inconsistent as might appear at first sight. The debt, for instance, may be economically restrictive but politically inflationary, its economic effect engendering a political movement to get rid of it by means of inflation. Alternatively, the debt may be deflationary most of the time but may provide the fuel for inflationary spurts once in a while. A calmer view, however, suggests that there are deflationary and inflationary forces inherent in the debt which are operative at all times but which ordinarily neutralize each other to some extent. This being so, it becomes important to develop means of harnessing these forces and thereby convert what now looks like a bogey into a useful instrument of economic policy.

I. *The New Rôle of Debt Management*

In this study I intend to investigate some of the means of employing debt management as an instrument of economic policy. In doing so I shall treat debt management as distinct from, though perhaps not equal in rank to, fiscal policy and monetary policy. This emancipation of debt management from the sovereignty of fiscal policy, to which it is commonly regarded as belonging, is suggested by aspects of analysis as well as of convenience. The enormous rise in the size of the debt, and its wide distribution, has made it possible to exert a new type of influence upon national income, through changes in the form in which individuals and institutional investors hold part of their assets. The full implications of this new effect are still very largely unexplored, and it seems likely that, for the time being, its importance will not be primary. One must recognize, however, that it exists, and that it rests upon a principle different from monetary and fiscal policy, if we regard the effect of monetary policy upon national income as deriving mainly from variations in the volume and availability of money, and that of fiscal

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[1] This paper was delivered as a lecture before a meeting of the National School of Economics of the University of Mexico, in Mexico City, May, 1945.

policy mainly from direct injections into, and drains from, the income stream, via government expenditures and taxation.

The desirability, on analytical grounds, of distinguishing between fiscal policy and debt management is further emphasized by the resulting convenience and clarity in tracing the effects of debt management upon the economy. Almost every debt operation inevitably has repercussions upon monetary conditions and upon the budget. In this sense, debt management becomes an aid—sometimes an obstacle—to monetary and fiscal policy. Much of this paper will be concerned with elucidating these relationships. In this, it is helpful, though by no means essential, to adhere to the distinction suggested and to treat debt management as a separate instrument of economic policy.

Separate emphasis upon debt management finally is suggested also by the general economic, political, and social significance which the debt has acquired. That a public debt the service charges on which amount to between 5 and 6 billion dollars constitutes a political problem of the first order goes without saying. The distribution of the debt, and the tax burden which it imposes, may produce important realignments among pressure groups and may lead to a re-weighting of the relative interest which different groups have in various basic economic and social policies. The handling of the debt will decisively influence the future of the banking system, and the interest rate policies, in particular, into which the debt may drive us will be of paramount importance for the future of the *rentier* class and of many educational and other non-profit institutions. In recent discussions,[2] varying em-

[2] Numerous important contributions to the study of the post-war debt problem have appeared in recent months. *Cf.* Charles C. Abbott, "Management of the Federal Debt," *Harvard Bus. Rev.*, Vol. XXIV, No. 1 (Autumn, 1945), pp. 97-108; "Commercial Banks and the Federal Debt," *Am. Banker,* Vol. CX, No. 227 (Sept. 29, 1945), pp. 8-15; Evsey D. Domar, "Burden of the Debt," *Am. Econ. Rev.*, Vol. XXXIV, No. 4 (Dec., 1944), pp. 798-827; Aubrey C. Lanston, "Crucial Problem of the Federal Debt," *Harvard Bus. Rev.*, Vol. XXIV, No. 2 (Winter, 1946), pp. 133-50; Simeon P. Leland, "Management of the Public Debt After the War," *Am. Econ. Rev.*, Vol. XXXIV, No. 2 (June, 1944), suppl., pp. 89-132; Abba P. Lerner, "Government Spending, Public Debt and Postwar Taxation," *Internat. Postwar Problems,* Vol. II, No. 1 (Jan., 1945), pp. 13-34; Hedwig Reinhardt, "On the Incidence of Public Debt," *Social Research,* Vol. 12, No. 2 (May, 1945), pp. 205-26; Lawrence H. Seltzer, "The Problem of Our Excess Banking Reserves," *Jour. Am. Stat. Assoc.*, Vol. 35, No. 209 (Mar., 1940), pp. 24-36; Carl Shoup, "Postwar Federal Interest Charge," *Am. Econ. Rev.*, Vol. XXXIV, No. 2 (June, 1944), suppl., pp. 44-85; Henry C. Simons, "On Debt Policy," *Jour. Pol. Econ.*, Vol. LII, No. 4 (Dec., 1944), pp. 356-61; William Withers, *The Public Debt* (New York, Day, 1945); "The Public Debt and the Banks," Institute of International Finance of New York University, *Bull. No. 137,* May 8, 1945.

Also see various contributions in *Public Finance and Full Employment* (Post War Economic Studies No. 3, Board of Governors of the Federal Reserve System, Washington, 1946).

phasis has been placed upon different aspects of debt management, and the aims of debt management have sometimes been defined with respect to rather specific and hence limited purposes. The importance of the debt and the great potentialities which it entails seem to justify viewing its management in the broadest possible terms and regarding it as a major element of national economic policy.

Nothing of this, of course, implies that decisions on the debt should be arrived at independently of monetary and fiscal policy. In particular, I am very far from suggesting that the effective management of the post-war debt requires the setting up of still another government agency. On the contrary, the close interrelation between fiscal policy, monetary policy, and debt management calls for a high degree of integration in policy making. At the present time, we quite obviously do not have this integration. Debt management rests with the Treasury, monetary policy is divided among Federal Reserve, Treasury, and a variety of government lending institutions, and fiscal policy, while primarily made by Congress, is influenced in some measure by practically every other branch and sub-division of the government except the Supreme Court. If there is any institutional rearrangement which the present analysis seems to suggest, it would be the establishment of an office or cabinet post which could coördinate and direct all these activities.

Some Characteristics of Debt Management. Before entering upon this discussion, it will be well to refer briefly to certain general features of debt management. Unlike monetary and fiscal policy, debt management does not lend itself particularly to being worked out in general theoretical terms. Because it is intimately tied up with the existing size and character of the debt, the discussion must normally start from an actual situation and will always have a tendency to go into particularizing detail. For this reason it probably will appeal less to the economic theorist than monetary and fiscal policy, but this should not detract from its practical effectiveness. On the contrary, fiscal and particularly monetary policy may well have suffered because of their adaptability to abstract theorizing.

The effects of debt management are largely of the qualitative sort, not easily amenable to quantitative determination. Variations in the character and distribution of the debt, in other words, will make security holders more or less inclined to change their rate of expenditure, but it can rarely be predicted how much. The impact of fiscal policy, on the other hand, is primarily quantitative: certain amounts are injected into the income stream, other amounts are taxed away, and these again can be broken down into consumption and saving. Monetary policy

probably occupies a middle ground in this respect.[3]

Debt management is less flexible an instrument, in many respects, than either monetary or fiscal policy and as such suited more to the long-run than to the cyclical approach.[4] It takes time to effect substantial changes in the character and distribution of the debt, and an effective debt policy therefore requires a fairly clear formulation of the policymaker's long-run expectations. It is unavailing to point out that such expectations are in danger of turning out false; any given debt policy will have its long-run effects, and to avoid formulating the expectations upon which the policy rests merely means that the effects will be produced, as it were, by default.[5] Nor is it necessary to formulate long-run expectations in great detail; what needs to be clarified is mainly whether the dangers to be guarded against lie primarily on the side of inflation or contraction. Uncertainty in this respect would suggest to some extent the continuance of a flexible policy; it must be remembered, however, that if "flexibility" is interpreted to mean emphasis on short-term financing, a flexible debt policy may in itself have predominantly inflationary implications. In formulating long-run expectations, it is clear that responsible management cannot afford to go overboard for an extreme theory; in fact, one may say that our own economic thinking, at least until very recently, was rather too strongly [illegible]pressed with the danger of stagnation. What will be needed is mainly [illegible]er orientation of our preparedness in the direction of what is [illegible]d as the chief danger.

[illegible]spects of debt management to be discussed in this paper are [illegible]owing:

1. Debt management "for the debt's sake";
2. Debt management as a limiting factor of monetary and fiscal policy;
3. Debt management as an aid to monetary and fiscal policy;
4. Debt management as a direct influence upon national income.

The discussion of particularly the third and fourth sections will largely be governed by the opportunities for a reshaping of the debt structure offered by the composition and distribution of the post-war debt.

[3] In so far as debt management is also an important determinant of the cost and volume of money, its effects are akin to those of monetary policy.

[4] This is not to deny that important anticyclical effects can also be achieved. *Cf.* Leland, *Am. Econ. Rev.*, Vol. XXXIV, No. 2, suppl., pp. 89-132.

[5] In some respects it may be possible, as Professor Abbott suggests, to minimize the effects of the debt and to make the economy behave as it would if there were no debt. But in a broader sense, I am inclined to think that we should concentrate more on using the debt as an instrument of positive policy than on trying to immunize ourselves against it. *Cf.* Abbott, *Am. Banker,* Vol. CX, No. 227, pp. 8-15.

II. *Debt Management "For the Sake of the Debt"*

"Taxation for revenue's sake" has become a slogan to characterize a kind of backward fiscal attitude not in keeping with the enlightened trend of the times. No doubt the same flavor will come to be attached to debt management "for the debt's sake" and rightly so, in so far as this notion, phrased in one form or another, has been regarded as the chief standard of debt policy. Nevertheless, the parallel between taxation and debt management is not complete, and it would be dangerous to go too far in subordinating the familiar considerations of economy, soundness, and convenience to the broader aspects of debt management.[6]

The taxing power is a durable instrument, capable of standing much abuse, but the public credit is a sensitive plant. Before the First World War the public credit of some of the central European countries was just as good as ours has ever been; nevertheless, it was completely destroyed within a few years. It will take us some years to determine how far our own credit has been strained by the war, *i.e.*, whether the confidence primarily of non-bank investors has in any way been impaired, and we shall therefore have to proceed cautiously. Hence, the first consideration of the debt administrator must be the preservation of the instrument he is using—the public credit. Any "tampering" with public credit, such as compulsory modifications of debt contracts any other measure which might impair the high regard which in now have for the soundness of government obligations must be a This injunction probably will block some of the more ambitious genious schemes for reorganizing the debt. Nevertheless, it be strictly observed, for the possible adverse consequences even of a very large debt are unimportant compared to the calamity which a weakening of the public credit would imply.

From this point of view it is perhaps just as well that considerations of economy, soundness, and convenience are always likely to weigh more heavily with the men responsible for the administration of the debt, chiefly the Secretary of the Treasury, than with economists bent upon seeing "the broader picture," the writer of this paper among them. Under the heading of soundness should be mentioned, in addition

[6] These considerations are more or less the same as any private borrower would have in mind in arranging his financing: to minimize cost, to avoid the risk of being embarrassed or worse (though here the traditional fiscal viewpoint is rather broader), and to maintain a good credit standing.

[7] I would not regard the Seltzer Plan—freezing of part of the commercial banks' holdings by means of bond reserve requirements—as necessarily falling under this injunction, although the repercussions of such a measure upon the morale of other large holders would need to be watched.

to the religious observance of contract terms, the question of how much of the floating debt ought to be funded. This matter has not figured too prominently in recent discussions, because it has often been interpreted to depend upon whether or not there is any danger that the government might have difficulty in renewing its short-term maturities, which is very unlikely. Actually, classical concern over a floating debt was aroused by precisely the same danger which we now have in mind when we refer to excessive bank purchases of government obligations, whether short or long term. In a world where banks were not accustomed to buy medium- or long-term government securities but did buy or discount freely all kinds of short-term obligations, the issue of floating *versus* funded debt was drawn along much the same lines as the present issue of bank *versus* non-bank financing. Today, therefore, the question of whether or not part of the short-term debt should be funded very properly is subordinated to that of what to do with the portion of the debt held by the banks.

The issue of economy in debt administration, which likewise will tend to weigh rather heavily in the administrator's judgment, should not be allowed to obscure the broader demands of economic policy. There seems to be some danger that popular sentiment may become overimpressed with the cost aspect of the debt. Congress, then, might force the Treasury into "interest saving" policies—the economic cost of which in other directions could be much higher. This fear of public and Congressional reaction to high debt charges runs through many present-day writings.

A related danger is that the Secretary of the Treasury himself may become overimpressed with the importance of economizing on interest—through pride of achievement, or because it facilitates the rest of his job. He will have to balance carefully the unquestioned importance of keeping interest charges down against the broader demands of economic policy.

As to convenience of debt management, there will always be a good deal of freedom for practical arrangements of maturities, call-dates, and similar features within the requirements of any given policy, which at the same time would meet the needs of the market and maintain the demand for government securities. There is perhaps some danger that such factors will tend to displace major policy objectives in the administrator's mind; frequent checking up on their compatability with these objectives will, therefore, be in order.

III. *Debt Management as a Restraint Upon Fiscal and Monetary Policy*

The mere existence of a large debt is likely to color and influence our approach to many problems, even though it need not altogether force

our hand. This is particularly true of our views of the optimum level of income. A large and particularly a growing debt are not easily borne without a large and growing national income.[8] Fiscal and monetary policy, therefore, will be under constant pressure to produce such an income.

Full employment, of course, will in any case be the goal toward which these two policies would normally aim. In the long run, however, full employment does not imply a clear-cut income goal. If full employment is produced, in part, by reduction of hours, lengthening of the educational period, and going slow on the introduction of labor-saving devices, it will carry with it a much lower income than might otherwise prevail. A large and growing debt, calling for maximum income, discourages the use of such devices and puts correspondingly heavier pressure upon fiscal and monetary policy.

Should we ever be faced with the choice which Dr. Williams fears to be ahead,[9] between an income rising rapidly because of technological progress but accompanied by technological and cyclical unemployment, and a steady level of full employment obtained at the expense of less rapid progress in technology and income, our choice may be seriously affected by the exigencies of the debt.

By the same token, the risks involved in passing through a cyclical depression are increased. In the United States, depressions have traditionally yielded a large crop of inflationary panaceas. During the depression of the early thirties, some fairly innocuous ones were converted into law. In future, stronger ones might be resorted to. They are likely to be more effective in stimulating the economy, by virtue of the inflationary potential created by the debt,[10] and more dangerous if pronounced inflation should ensue, because of the greater shifts in wealth and income distribution which a pronounced rise in the price level would cause in a high-debt economy.

In addition to the bias which the debt introduces into income policy, it also reduces our freedom of price policy. Any fall in the price level will increase the burden of the debt. A return to the pre-war price level, which some sectors of the public might consider desirable and perhaps even regard as the natural thing, becomes undesirable from this angle, even if it were possible in other respects. On the other hand, the possi-

[8] To be sought, of course, is a growing real income, even though a growth merely in money income would also reduce the burden of the debt.

[9] John H. Williams, "Free Enterprise and Full Employment," in *Financing American Prosperity* (New York, Twentieth Century Fund, 1945), p. 353.

[10] The inflationary potential of the debt as referred to in this paper comprises not only the liquidity of non-bank investors resulting from government security holdings, but also the additional money supply created by bank holdings.

bility of reducing the debt burden by raising the price level lends an unholy appeal, for certain groups, to measures aiming in that direction.

Nevertheless, while the debt confronts us with the need to aim at a maximum income, it makes it increasingly dangerous to push the economy to the limit of its productive capacity. The inflationary potential of the debt is a latent element of instability which may come to life when other factors begin to work in the same direction. To be on the safe side, those responsible for fiscal and monetary policy will have to maintain a certain slack in the system, a reserve of productive capacity to act as a shock absorber. Again fiscal and monetary policy find themselves inhibited, to some extent, by the debt.

Restraints of a different sort are imposed specifically upon fiscal policy, for instance, by the absorption of part of the country's taxable capacity through the debt service. Interest payments, of course, do create additional taxable income, but the added tax yield can only be a minor fraction of that income. Given the fact, therefore, that the total revenue is limited by the willingness of Congress to levy taxes, the volume of exhaustive expenditures is restricted by the need to take care of the transfer payments required by the debt service. Exhaustive expenditures, even in a balanced budget, constitute an equivalent contribution to national income.[11] Transfer payments, however, do not. The possibility of raising national income by means of a high balanced budget is therefore curtailed by the debt, apart from the limitations imposed upon particular types of desirable expenditures. If we think in terms of tax reduction to stimulate investment, we likewise find ourselves in part thwarted by the long-run need—according to standards other than fiscal surrealism—to match debt service with taxation.

Finally, the debt service hampers the endeavor of fiscal policy to make the budget more progressive, or less regressive, *i.e.*, to take as much as possible from the high income groups and to channel expenditures (and the benefits which these expenditures yield) as much as possible toward the lower groups. A very considerable proportion of interest payments tends to be saved, because the bulk of the debt is owned by wealthy individuals and by banks. Although the leakage from the income stream which results should not be overestimated, it undoubtedly exists. Since our present tax structure already weighs heavily upon the higher income groups, very little can be done in the way of tax readjustment to reduce this new leakage.

The impediments, however, which the exigencies of the debt are likely to put in the way of fiscal policy are probably minor compared

[11] *Cf.* Alvin H. Hansen and David Perloff, *State and Local Taxation and the National Income* (New York, Norton, 1944), pp. 245-46; and my article "Income Generating Effects of a Balanced Budget," *Quart. Jour. Econ.*, Vol. LIX, No. 1 (Nov., 1944), pp. 78-91.

with the obstacles which it may create for monetary policy. The latter, already pushed into the background by fiscal policy, may well become one of the foremost victims of the debt, unless new techniques and new fields of application can be developed.

The great liquidity created by the debt has removed many enterprises from the need to borrow from banks and has thus made them less amenable to monetary controls. The banks, in turn, have their heavy government portfolios as a first line of defense against credit restriction by the monetary authorities. They could, for instance, let some of their short-term holdings run off and thus create a margin out of which to make commercial loans. If the Federal Reserve then should not refinance the government's short maturities, short-term rates would go up, but even this need bring no substantial restriction of bank credit. At higher rates the public would probably take over a larger part of the floating debt, again giving the banks free funds for the commercial lending. Since credit control has operated more effectively through reduction in the availability of money than through an increase in its cost, the banks probably would find a ready demand, at slightly higher rates, for a substantial proportion of the loans that were being demanded at lower rates. Higher short-term rates, moreover, might bring Federal Reserve policy into conflict with Treasury policy, a point to which we shall return presently.

Related considerations apply if an attempt should be made to control credit by operating on long-term maturities. Again, within reasonable limits, it is the availability of funds rather than their cost which counts. The volume of idle investment funds, created by the debt, is likely to be so great, and the hunger for securities with yields slightly better than present ones so intense, that a restriction in the availability of funds will be hard to bring about. Moreover, the position of the banking system must be considered. Although the harm which arise in long-term rates could do to the banks has sometimes been greatly exaggerated, in view of the conservative structure of their portfolios, this aspect is not altogether without importance. In addition, the monetary thinking of the last ten years, with its emphasis upon low rates as a means to check secular stagnation, has made us hesitant to raise long-term rates for purposes purely of cyclical control.

In the case of long- as well as of short-term rates, the rise in the cost of debt service has made it an increasingly weighty factor in the determination of monetary policy. We are dealing here with a conflict between monetary policy and debt management for the sake of the debt in its economy aspect. With something like 70-80 billion dollars of our 250-275 billion post-war debt carrying maturies of less than one year, a rise in short-term rates by ½ per cent could easily

add 1–2 billions to the annual cost of the debt. Even though credit restriction would have to be resorted to only in a period of rising national income, with a corresponding improvement in tax yields, the extra burden would be quite noticeable.

If short-term rates are raised temporarily, the increase in service costs is rapid but transitory. If long-term and medium rates go up, the jump in annual interest payments from this particular source is not so steep, but neither is it transitory. The Treasury will be particularly unwilling to permit such an increase if it has to finance a substantial deficit—perhaps not likely during a peacetime boom—or if it is attempting to fund some of its short-term indebtedness. But even when there is no deficit, and no change in the maturity structure of the debt is contemplated, the mere maintenance of that structure will call for the continuous issuance of a heavy volume of long-term instruments. With something like 40 per cent of a 250-275 billion debt in securities maturing after eight years or more, as much as 6 to 10 billions of government bonds would have to be sold annually. In other words, the mere maintenance of the debt is likely to put a substantial premium upon low long-term rates and to weigh heavily against a policy of raising long-term rates.[12]

It is true that these considerations of debt management for the sake of the debt ought not to outweigh the broader needs of monetary control. If a general rise of interest rates is regarded as the best means of stopping inflation, it should certainly be worth an extra 2 billion or thereabouts in transfer payments. A general rise in rates, however, is not likely to be looked upon with favor in the present state of our thinking. It could meet with general approval only if we had meanwhile moved into a different environment, one of normally full employment and balanced budgets. In that environment an increase in taxes to pay higher interest could be regarded with some measure of equanimity.

It may be said, therefore, that it is not only the economy motive of debt management which is likely to inhibit a cyclical monetary policy, but also the general stagnation complex which, rightly or wrongly, has been influencing our attitude. Should subsequent experience remove that incubus, the economy motive will also lose much of its force, and monetary policy will then regain much of its earlier freedom.

IV. *Debt Management as an Aid to Fiscal and Monetary Policy*

So far we have been dealing with the rather depressing prospect that fiscal and monetary policy are likely to find themselves hamstrung by

[12] In this connection, it may be worth while to point to an aspect of debt maintenance,

the existence of the debt and the inherent needs of its management. Now we come to deal with the positive side of the situation: the support which debt management can give to monetary and fiscal action.

(a) *Fiscal Policy*. The most obvious use of debt management as an aid to fiscal policy is the sale of new securities to finance a deficit which the Treasury cannot or will not cover out of its General Fund. It may be noted, however, that if the Treasury carries a large cash balance, which the contingencies inherent in its enormous demand liabilities may make advisable,[13] the nexus between a deficit and new financing may be loosened considerably, making debt management somewhat more independent. In the reverse case—appearance of a budget surplus—the nexus is even less close, since accumulation of surpluses in the General Fund is always possible instead of debt repayment. Decisions regarding the latter will tend to have mainly monetary character.

A second important use of debt management in support of fiscal policy is the variation the total amount of interest payable through appropriate gradual changes in the character or maturity of the securities outstanding. With 20 to 25 per cent of the total post-war budget going for interest payments, quite significant effects can be achieved in the way of reducing the tax burden called for by a balanced budget. It may well be, however, that the cheap money policy of the last 12 years has exhausted many of the potentialities of this line of approach, within the present institutional set-up of the debt. On the other side, there is the possibility of increasing budgetary outpayments through higher interest charges on the debt. This approach does not seem particularly interesting at this time, but it might conceivably be used as a consumer subsidy, a means of increasing the deficit without going in for additional public works or other exhaustive expenditures. Obviously, however, this would make sense only with respect to parts of the debt held by broad consumer groups. Moreover, the net effect might turn out to be deflationary, if much new saving should be stimulated by higher interest rates.

A third important service which debt management can render to

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and particularly of debt repayment, which is sometimes disregarded. Decisions regarding debt repayment revolve around the question of not which securities the Treasury should repay, but which it should sell. The debt is always paying itself, with little discretion (other than the call feature) for the Treasury. Some issues mature and must be met, the rest becomes of shorter maturity and thus becomes either unsuitable for its respective holders, or at least takes on a different rôle in their portfolios. By not maintaining, through refunding operations, the amounts outstanding in any given category of maturities, the Treasury can pay off any group of holders.

[13] Cf. Abbott, *Harvard Bus. Rev.*, Vol. XXIV, No. 1, p. 101.

fiscal policy consists in modifications of the debt so as to vary the amount of interest which goes into saving. This means to attempt on the expenditure side of the budget what progressive taxation is doing on the revenue side. The limitation of an individual's annual purchases of Series E bonds to $5,000, for instance, has this effect. Another application of the same principle seems to be implied in limitations upon securities eligible for bank purchase. A good deal more could be achieved along the same lines, without depriving the banks of reasonable profits. A low-coupon bond reserve, or refinancing of the banks' maturing short-term holdings by the Federal Reserve, with an attendant increase in reserve requirements, are among the possibilities which have been discussed. The interest receipts of insurance companies might be reviewed in the same light, although the companies' obvious need for a certain rate of return on their funds makes their situation rather different.

(b) *Monetary Policy.* In almost all major countries, the public debt has become the chief medium through which monetary policy operates. Open market operations in government securities have in large part taken the place of loans on and rediscounts of commercial instruments, even where these security operations have a genuine monetary character and do not constitute disguised government financing. This is the logical outcome of the fact that governments, through their borrowings from the banking system, have themselves brought about the additions to the money supply which otherwise would have had to be created through business borrowing. In the long run, as pointed out above, monetary policy may be put out of business altogether by this development, unless it develops new tools, but meanwhile the instruments of public indebtedness provide it with its chief *modus operandi.*

At the same time, the mere existence of the public debt calls for constant action by the monetary authorities. The maturity structure of the debt shifts every day, as each maturity becomes a little shorter. Given the demand for different types of maturities, holders will be induced to rearrange their portfolios. This would cause a shift in the rate structure, unless counteracted by the authorities (or unless the rate structure were perfectly horizontal). If substantial borrowing operations are in progress, the potential unsettlement of the market is, of course, much greater.

The technique of avoiding and counteracting such unsettling effects through coöperation between the monetary and the debt authorities—in the case of the U. S. Treasury and Federal Reserve—has been developed to a fine art. The preparation of the market, the firm offer to purchase 3/8 of one per cent bills, the choice of securities to be offered, the handling of the proceeds through war loan deposit accounts,

are all parts of an elaborate technique designed to effect the transfer of at times more than 20 billion dollars in a single drive from the banks and the public to the Treasury. In Britain, somewhat different devices, including tap issues and war loan deposit accounts, are employed toward the same ends.

In wartime the coöperation which treasuries lend to central banks inevitably has as its major aim to facilitate further borrowing. Eventually, however, as deficits are eliminated, the normal aims of monetary policy can again be taken increasingly into account. Debt management, in other words, can then be used more intensively to help in regulating the money market in general and possibly to exercise certain qualitative controls.

The chief function of monetary policy, very broadly speaking, is to increase the cost and reduce the availability of money in times of boom and to do the reverse in times of depression. Debt management, in almost all of its phases, has some bearing upon the state of the money market. In a general sense, operations connected with the debt influence the money market via three channels: (1) changes in bank holdings of government obligations, which immediately or ultimately lead to changes in the volume of deposits; (2) changes in holdings of non-bank investors, which, while they leave unchanged the volume of money, are nevertheless associated with shifts between investment and transaction money ($M_2 + M_1$);[14] and (3) shifts of funds between the banks and the Federal Reserve.[15]

In some respects, the effects of debt operations are identical with those of open market operations. This is true in so far as a shift in funds between the banks and the Federal Reserve and, hence, a change in bank reserves is involved. When the proceeds of new issues are left in war loan deposit accounts, or when, through a change in the maturity structure of the debt or by other devices, a certain proportion is shifted from the public to the banks or vice versa, bank reserves remain unchanged and only the volume of deposits is affected.

It is not only through its operations, however, that the Treasury can influence the market, but also through its authority as a policy-making agency. By letting the market know, or by merely allowing it to believe, that its intentions are of a certain sort, it can do much to bring these

[14] In the case of sales of new securities, the volume of money remains unchanged once the government has spent the proceeds; in the case of repayment, the money volume existing prior to the respective tax payments is restored.

[15] If these shifts involve a permanent increase or decrease in the Treasury's balance with the Federal Reserve, their effect likewise is permanent. Otherwise, there is only a transitory effect, terminating with the restoration of bank reserves and, if no change in bank holdings was involved, of the original money volume.

conditions about. This is more than the power of a monopsonist. The latter exploits a given supply curve by taking into account the marginal cost of his purchases—or borrowings—instead of their price. This the Treasury could hardly do, since the volume of funds to be borrowed is almost always dictated by considerations other than cost. Through its moral authority, however, the Treasury can influence the supply curve—the liquidity preference schedule—and induce it to shift within probably rather substantial limits. While in the United States no commitments have been made of quite so specific a character as those given in Britain and Canada, it is evident that the market has interpreted official policy to be one of continued low rates, and this undoubtedly has greatly influenced its willingness to continue buying low-coupon securities.

V. *Debt Management as a Direct Influence upon National Income*

Debt management can affect the expenditures of investors, and hence national income, by inducing or obliging them to change the form of their assets. Whenever the conditions on which debt can be held are changed, or whenever other conditions influencing investment behavior change, the investor must make an adjustment at several margins. An institutional investor must realign the marginal attractiveness of holding debt, or some other income yielding asset, or cash. The same is true of the wealthy individual investor. Investors with small holdings and small incomes must, in addition, consider the consumption margin and possibly that of income (leisure).

The task of debt management, from this angle, is to induce adjustments which are in accord with current economic policy, and to prevent adjustments which are not. Its effectiveness will depend, in part, on the sensitivity of the various types of investors to slight displacements in their margins, and on the elasticity of their reactions. At the same time some important effects depend on a certain inertia in the behavior of the investor. Much of the inflation-curbing effect of war bonds, for instance, probably derives from the inertia of their holders, which will cause many of them to keep their bonds even at times when the satisfaction to be obtained from consumption is somewhat higher.[16] For the effectiveness of debt management it is necessary, moreover, that not all the adjustment should take place at the cash margin—through changes in the amount of cash held by investors. Nor can debt management be effective where one of the margins is subject to violent fluctuations.

[16] Instead of inertia, one might in this case speak also of a kind of moral principle which makes many people hesitate to draw on past savings.

Such might be the case of a corporation which invests idle funds in governments but throws them out regardless of their yield as soon as the funds are needed in the business.

Since the effects of debt operations upon different types of investors are not identical, it will be convenient to discuss them with respect to each major group. We shall distinguish for that purpose (1) banks, (2) institutional investors and wealthy individuals, (3) nonfinancial corporations, and (4) small holders. Again, it is necessary to recall that in speaking of the direct influence of debt management, we are dealing with particular aspects of operations which at the same time have monetary and fiscal policy implications.

(1) *Banks.* The shifting of securities into the banking system in times of depression and the squeezing out process in case of a boom have already been discussed under the heading of monetary policy. For traditional debt management, this means concentration on short-term financing in depression, the opposite during a boom. In the future the same effects may perhaps also be achieved through the use of more novel debt instruments.

But this is not all that can be done in this sphere. One way of stimulating the willingness of banks to take on new risk loans might be to give them complete assurance as to the price stability of their government portfolio. This could be done by creating for them a special instrument redeemable on demand, with a fixed interest rate, or along the lines of Series E or G savings bonds.

Another means of stimulating bank lending might be to limit their income from the public debt, through the use of special low coupon instruments. However, since beyond a certain point banks are under no great pressure to earn more money, the impulse to take on bigger risks in the commercial field because of lesser income from the debt might not be strong. Moreover, if the cut in their debt income prevents them from accumulating surpluses commensurate with their risk assets, their policy may be influenced less in the direction of aggressiveness than of caution.

(2) *Institutional Investors and Wealthy Individuals.* The great extension of the public debt and the decline in interest rates which preceded it has caused this group to become increasingly saturated, from a portfolio management angle, with low-yielding government obligations and at the same time virtually famished for better yielding material. The movement in the direction of higher risks has been only gradual, however. In some instances, such as life insurance companies, a loosening of statutory investment restrictions might help, and might be coördinated, for greater effectiveness, with certain measures of debt

management. By restricting the offerings of obligations attractive to the companies, by limiting their purchases, or by requiring their portfolios to contain a certain proportion of other assets, they could slowly and gently be pushed in the direction of more stimulating uses of their funds.[17]

If a restraining rather than a stimulating influence is the aim of the debt authorities, it would be necessary to induce investors to add further governments to their portfolios and to anchor more securely those already there. An interesting possibility might be the creation of new securities, based on the principle of rising yield underlying the savings bonds, to be made available to large investors. The rising marginal yield would be a strong factor with a carefully calculating investor in making these holdings firm. To be attractive, the instrument would probably have to be made redeemable at sight or on short notice, which might seem to increase the inflationary potential of the debt. However, it may be doubted whether this danger would be much increased by a moderate use of demand obligations beyond that which circumstances and policies would make it without their use. The net effect very probably would be to make holdings firmer and thus to reduce expansionary pressure.

(3) *Nonfinancial Corporations.* Although nonfinancial corporations have shown themselves very amenable to the government's financing needs in wartime, they are likely, in future, to become very much less susceptible to the Treasury's offerings. Security investments are not their business, and when the patriotic appeal evaporates, high tax liabilities shrink, and new uses for funds open up, they are likely to treat their holdings rather summarily. The average corporate management is likely to hold on to its government obligations as long as the money is not needed, and to sell out as soon as it is. Little attention will probably be paid to such niceties as the difference between ⅞ per cent and 1½ per cent, figures which in any case bear no relation to the returns which most corporations must expect on their capital. Hence,

[17] Traditional life insurance opinion probably would oppose the suggestion of risk-taking, on the very reasonable grounds that the chief function of insurance companies as investors is to protect the policyholder's savings. The loss of his savings, however, is only one of the risks which an individual runs under our economic system, and in too zealously guarding him against it his protectors may cause him to fall prey to another one—to lose his job. A single individual can withhold his funds from venturing and thus shift his proportionate share in aggregate business risk, without fear of reducing the total amount of risk investment below what is needed for full employment (including his own). It is very doubtful whether insurance companies, as holders of a large portion of national savings, can do so without damage to their clients' employment prospects. In fairness, it should be added that the aversion of most life insurance companies to any suggestion of common stock investment may in part also be due to the fact that, under present accounting practices, such investments would subject the companies' published balance sheets to the effects of stock market fluctuations.

it will be difficult to exert any significant influence on corporate policy by the ordinary devices of debt management.

In the face of a serious inflationary threat, however, particularly if occasioned by excessive investment activity of corporations, it might be possible to employ the public debt as a countermeasure. Legislation might be passed requiring corporations to hold certain amounts of debt, which would not be eligible as collateral for bank loans, thus immobilizing part of their purchasing power.[18] Admittedly this would be an extreme measure and would present great difficulties of avoiding hardships and unfairness. In any case, it should not be based on existing holdings, to avoid giving the impression that the contractual right of free disposal was being tampered with, and so as not to penalize enterprises which have lent particularly active support to wartime financing. Alternatively, the holding of such bond reserves might be required only of companies engaging in plant expansion.

(4) *Small holders.* Like the corporation, the small debt holder—chiefly owners of E bonds in denominations of $100 and less—will probably prove hard to manage from the debt angle. Usually he has had no previous experience in security ownership, and his actions, for this and other reasons, are unpredictable. His marginal adjustments are likely to be of the rough and ready sort, not easily influenced by small pro's and con's. His holdings, however, are of particular interest because, among all holders of public debt, he is the only one whose marginal adjustments will include adjustments at the consumption margin. His operations, therefore, are likely to have considerable influence on the volume of consumptive outlay.

In attempting to guide the small holder's behavior by means of debt management, particular care must be taken to avoid anything that looks like an infringement of the terms of contract. Within these terms, however, there are quite a number of operations which may prove effective. This belief rests on the circumstance that small holders tend to be influenced particularly by their inertia, and to follow the line of least resistance. If debt management succeeds in getting them to buy bonds, these are apt to be held unless a powerful inducement appears to redeem them. If it succeeds in putting money into their pockets, part at least is apt to be spent for consumption.

If a stimulating effect is desired, the present payroll deduction plan obviously should be abandoned and business enterprises discouraged

[18] A suggestion was made by Mark Mitnitzky in 1941 to establish monetary reserve requirements for corporations. A bond reserve might be more acceptable, because it yields a moderate return. *Cf.* Mark Mitnitzky, "Some Monetary Aspects of Government Borrowing," *Am. Econ. Rev.*, Vol. XXXIII, No. 1 (Mar., 1943), pp. 21-37.

from continuing it individually. While part of the savings now going into E bonds through payroll deduction will merely be shifted to direct purchases of bonds or into additional savings bank deposits, consumption probably will also increase. This step might be particularly effective in breaking the high saving habit which some previous low-savers are believed to have acquired during the war.[19]

A small stimulus might also be achieved by making E bonds eligible as collateral under bank loans. More effective than this would probably be an offer to redeem E bonds at more than their current redemption value, perhaps at a value corresponding to an average 2.9 per cent yield, which the bonds would ordinarily reach only at maturity. This offer, which would be purely optional for the holder, might induce a substantial volume of redemptions, part of which again would probably go into consumption, this being the line of least resistance. Finally, if the availability of E bonds appeared to result in an excessive amount of saving in this form, some slight reduction in total saving might perhaps be brought about by reducing the yield, or by discontinuing the instrument altogether.

If a restraining effect is desired, an attempt should be made to continue the payroll deduction system wherever possible. The situation six months after V-J Day obviously confirmed the Treasury's decision to do so, even though this decision may have originated primarily from somewhat different considerations.

A device which might help to keep E bond money invested would be an offer to pay off the full value of maturing bonds, at the holder's option, with a new bond having equal or similar characteristics. Another possibility would be to offer conversion into annuities.[20] Finally, the piecemeal redemption of the "portfolios" of individual holders might be curbed by an offer to consolidate them into a smaller number of larger instruments, with proper allowance for the age of each of the original bonds.

In conclusion, it may be appropriate to repeat some of the points already stressed earlier. Debt management is not primarily an anticyclical but a long-run instrument. Shifts in the character and distribution of debt cannot and should not be made rapidly for technical reasons as well as because public confidence might be impaired. The broad lines of policy must remain fixed for a number of years. More-

[19] If the government takes steps, implicitly, to discourage individual thrift, it ought to draw the consequences in increasing social security protection.

[20] *Cf.* Ivan Wright, "Managing the Public Debt," *Commercial & Financial Chronicle,* July 5, 1945, p. 85.

over, too much should not immediately be demanded of debt management in the way of positive influence. The preceding discussion has shown that, while a good deal can be accomplished, particularly in combination with fiscal and monetary policy, the possibilities of positively influencing national income through debt management at present still are fairly limited. It seems almost certain, however, that future thought and experience will uncover many new possibilities. Intellectually and practically, we have barely begun to exploit the new instrument.

A CRITIQUE OF FUNCTIONAL FINANCE THROUGH QUASI-FREE BANK CREDIT

By J. CARL POINDEXTER*

Recent preoccupation with the issues of fiscal policy and the national debt has engendered widespread interest in the collateral problem of possible fiscal techniques for minimizing the debt and tax burdens associated with prevailing financial practices.

As is well known, the process of bank-credit creation has long provided the basis for an irrepressible philosophy of monetary reform which would eliminate interest payments on government debt arising out of government borrowing from commercial banks. The arguments of its adherents run as follows: The coinage and regulation of money is an exclusive and sovereign prerogative of government; government borrowing from commercial banks is not "genuine borrowing"; the government should not be obliged to pay, in perpetuity, hundreds of millions a year to the banks for the deposit currency which the banks simply manufacture and turn over to the government in exchange for its bonds; if a fiscal policy which involves the creation of new money is to be pursued, the government, rather than private issuing agencies (banks), should enjoy the seigniorage on the new money issues. In other words, most exponents of these views relating to present fiscal policy regard government interest payments to the banks as wholly or partly unearned and, at least, a partially unnecessary burden on the government and the taxpayer. They insist, therefore, that if the banks are to be permitted to create the funds which they advance to the government, a new, fiscally less burdensome *method* of compensating them for manufacturing credit for the government should be instituted.

One possible and representative method calls for the issuance to the banks of special, non-marketable, non-interest-bearing securities. This method contemplates that, in return for the monetization of each security of a given denomination, the banks be paid a "reasonable" service charge at the time of issuance, but nothing in the way of interest thereafter. The criterion of repayment of even the principal of such securities would be inflation control, not contractual obligation.

As safeguards against possible inflation, the more subtle proponents of this sort of fiscal innovation propose that the monetary authority be invested with plenary powers over reserve requirements, open market operations and, in addition, the power to impose special taxes to retrieve inflationary excesses in the money supply.

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The purpose of this paper is to analyze some of the issues and expose some of the misconceptions underlying such proposals for facilitating the practical application of the new philosophy of fiscal policy or "functional finance" through the abatement of interest on government debt and deficits.

I. *The Cost of Bank Credit Creation*

In both England and the United States, the enormous growth in the public debt held by the commercial banks has given new impetus to the arguments and proposals for radical modification of present fiscal and financial practice. For example, following the lead of *The Economist* of London, Professor C. R. Whittlesey has presented the following thesis:

> The logic of the change in function (of commercial banks) . . . raises a question as to the basis on which banks are to be compensated for the services which they perform. When their chief function was the allocation of capital to productive uses, it was reasonable to look to interest for the income with which to maintain the banking system. If their chief function is to care for the community's liquid resources and to facilitate clearing operations, should they not look for compensation to those who are benefited by these services?
>
> . . . as custodians of the public debt (which they have acquired through exercising the sovereign function of issuing money) it is by no means obvious that they are performing a service that warrants the compensation they are receiving for it. . . . What we now have is an arrangement whereby a large part of the services performed for depositors is transferred to the Treasury. It is not clear that this has any permanent economic justification.[1]

The indicated reform and its alleged advantages, as seen by *The Economist*, are summarized in the following quotation:

> Over a period of years, the aim should be to shift the greater part of the burden of meeting the operating costs of banks—suitably abridged by all reasonable economies—on to depositors, at least, to the extent of charging, for the services performed, what they are worth to the recipient. If, after this has been done, there is any part of the total costs (including reasonable profits) which is not covered by (a) interests charges on advances, and (b) interest earned on securities purchased in the open market, then—but only then—a charge should be made for the remainder of the public debt held by the banks. In other words, the cost to the Exchequer of this portion of the national debt would be the net cost of operating the banking system, after all of those for whom it performs services have paid for them. This net cost might well turn out to be nil, or even negative.[2]

[1] C. R. Whittlesey, "Problems of Our Domestic Money and Banking System," *Am. Econ. Rev.*, Vol. XXXIV, No. 1 (Mar., 1944), suppl., p. 252.

[2] *The Economist*, September 4, 1943, p. 312.

The first objection to the reasoning of the above-quoted writers is that borrowers from banks have always provided the revenue which defrayed the cost of furnishing depositors with free or partly free custodial and checking facilities, and interest on deposits. This arrangement is an ancient and spontaneous outgrowth of competitive forces. Hence, there is no *prima facie* reason for believing that depositors are any less deserving of free banking services at the hands of a banking industry whose chief customer is the government than they were when banks derived nearly all of their revenue from private borrowers.

The proposals under consideration appear to have their basis in a questionable conception of the nature of bank lending—namely, that the setting up of bank deposit credit to the government is a mere "service" operation for which a payment should be made which covers only the direct transaction and risk costs incurred by the banks in exchanging their credit for that of the government.[3] The inference that interest payments to the banks involves an unnecessary element of "subsidy" arises primarily from neglect of the fact that such payments are, for the most part, based not on the direct operational or risk cost to the banks of setting up and allocating deposit credit to the government, but rather on the cumulative real cost of vesting in the government command over present as against future goods. In other words, the costs of bank credit creation are essentially the same as those borne by the individual saver-lender.

The very circumstances under which banks create deposit currency and make it available to the government provide the clue to the reason why interest received by the banks is a payment for services whose costs are resolvable into the same real costs for which the individual saver-lender is paid. When the government (or any other customer) borrows newly created money from the banking system, it is the public, in actuality, which, through the agency of the banking system, does the real lending. The government (or other borrowers) can obtain bank-created money only when banks can create it; they can create it only to the extent that recipients of checks (drawn against lending banks) refrain from presenting them for cash, *i.e.*, lend back to the banks that which the banks lend to the government (or other borrowers). Recipi-

[3] Professor Whittlesey's doubts as to whether there is economic justification for continuing the present policy of paying interest on government debt acquired by the banks seem to be predicated on this theory. He says: "As holders of government obligations, the credit operations of banks are only indirectly related to the productive process. And in acquiring obligations of the government in exchange for their own, banks can hardly be said to provide credit of a higher quality than that which they receive." Hence he concludes that "the economic functions that were generally regarded as of primary importance in entitling them to a share in the income of society have for the most part disappeared." Whittlesey, *Am. Econ. Rev.*, Vol. XXXIV, No. 1, suppl., p. 251.

ents of checks will refrain from presenting them for cash, *i.e.*, lend the amounts involved back to the banks, only when there is an advantage in doing so; there is such an advantage when price free, or partly free, custodial and checking facilities are provided by banks to depositors, and when the banks offer interest on time and savings deposits. (Custodial and checking facilities constitute a species of interest paid by the government, or other borrowers, through the medium of the banking system, to depositors whose savings, in turn, are made available, through the medium of the banking system, to the government, or other borrowers.) Therefore, the price of bank credit, regardless of who pays it, must cover the cost to the banking system of lending and *continuously servicing* (*via* interest payments or the real equivalent) the pool of time and demand deposits the growth of which is a simultaneous and integral part of the process of credit creation. Such differences as may exist between the interest income of the banks and the value amounts of the services and interest paid to depositors are justified by the fact that banks relieve depositors of the trouble, expense and risks involved in lending and investing their funds.[4]

It is highly doubtful that the portion of bank operating expenses now, in effect, borne by the government could be shifted to depositors (via service charges) without destroying the banking habits of the public. To argue that depositors would absorb this burden is tantamount to arguing that there has existed a very rich potential source of revenue which banks have heretofore simply neglected to exploit. There is scant reason for accepting such a view. On the contrary, resistance to the present modest service charges on depositors' accounts suggests that

[4] Whether net interest is defined as a phenomenon of liquidity preference or time preference, there is an underlying real (subjective) cost entailed when individuals alienate their claims to goods. The aggregate amount of this cost varies directly with the length of time for which the claims are alienated, and the lender demands a reward proportional to the real cost incurred during the period of the transaction. This fact is not altered when the banks serve as intermediaries which provide the depositors (the real lenders) with the form of money in which (because of its superior convenience) they wish to embody their claims against the community.

Of course, so long as paper money remains a medium whose injections continue to satisfy liquidity preference, interest is not a socially inescapable cost of government deficit spending. But from the point of view of private economy, foregoing liquidity entails a real and inescapable cost for which an interest premium must be paid if "money" is to be obtained from individuals and private institutions on any voluntary contractual basis. Hence, interest-free bank credit would require a considerable measure of coercion if not outright nationalization of banking.

The question of socialization of banking and credit lies beyond the direct interest of this paper, but, as may be inferred from the arguments herein presented, it is doubtful that resort to socialization of banking, in order to avoid paying the liquidity premiums demanded by hoarders of existing money reserves, would, in itself, yield any real fiscal advantage to the government.

revenue possibilities in this direction are quite limited.[5] If we assume that half of the total earnings of banks, from loans and investments, is derived from interest premiums on government securities—probably not materially at variance with the existing state of affairs—it is difficult to believe that banks could boost service charges to sufficiently high levels as to produce aggregate earnings in amounts that would substantially offset the loss of interest on government securities. The required service charge increase, eight- or tenfold, would surely be out of the question. Hence, if service charges—accompanied perhaps by the total elimination of interest on time and savings deposits—were relied upon to compensate banks for the loss of interest payments now received from the government, it is all but inconceivable that depositors would continue to coöperate with the banks in the manner and to the extent required to preserve the present system of bank credit creation.[6]

Failing this coöperation, it would, of course, be impossible to shift "the greater part of the burden of meeting the operating costs of banks . . . on to the depositors." Hence, an attempt to shift the burden in question from the government to the banks would probably result in an enforced reversion to the economically inferior and socially more costly monetary practices of the past, or possibly the development of unencumbered substitute facilities. In either case, the probable monetary disorganization and its attendant social costs would very likely outweigh the fiscal advantage which is sought. If this be a correct view, there seems to be little theoretical justification for doubting that banks "as custodians of the public debt . . . *are* performing a service that warrants the compensation they are receiving for it." (Italics added.)

It is difficult to follow the logic of the expressed and implied views that banks exact undue rewards from the government when the prices and yields of their government securities are determined, directly or indirectly, by market conditions.[7] If it be true that "the economic functions of banks that were generally regarded as of primary importance in entitling them to a share in the income of society have for

[5] It will be recalled that service charges have accounted, in recent years, for a maximum of 4 to 5 per cent of total bank earnings. See *Federal Reserve Bulletin,* May, 1940, p. 398; June, 1943, p. 500; May, 1944, p. 448; and *Annual Report of the Federal Deposit Insurance Corporation for the Year Ended December 31, 1943,* p. 98. Even more striking is the fact that, for the year 1943, bank income from service charges amounted to only 12 cents per $100 of demand deposits. See the above-cited FDIC *Report,* p. 99.

[6] Incidentally, it is an interesting question how much of the approximately 26 billion dollars of currency now in circulation is being hold out of banks because of the existing restrictions on bank competition for deposits (demand and time) and because of the unwillingness of many people to pay the service charges exacted by most banks nowadays.

[7] Let it be recalled that the government can fix either the price of its securities or the rate of interest which they bear; but, under any given conditions, it cannot do both.

the most part disappeared," it is pertinent to ask why competition has failed, or cannot be relied upon, to bring about the appropriate banking economies and changes in the amounts and sources of the needed revenue to maintain the banking system. Only on the assumption that imperfect competition prevents the appropriate cost-price relationships can it be argued that radical modification of existing sources and amounts of bank income is needed to enable the government to escape an unduly burdensome interest bill.

It must be conceded that local circumstances do, in accordance with the theory of monopolistic competition, give rise to artificially high and inflexible interest rates. In fact, it is notorious that interest rates in the interior and rural areas of the country are, in large measure, conventional and non-competitive. But the same thing cannot be said of the large urban money markets. Especially, in regard to the market in government bonds, it cannot be denied that, on the demand (investors') side, the competition—which is nation-wide and bank industry-wide—is about as unrestricted as that to be found in any important industry in the country. Country banks which wish to invest in securities enjoying a nation-wide market are compelled to meet the terms set by competitive factors in the money centers in which nation-wide money supply and demand forces are focused. Moreover, in the nation-wide securities market, commercial banks are exposed to competition with every kind and class of non-bank investor. If there is imperfect competition in the market for government securities, it exists on the side of and redounds to the advantage of the government which, as the only source of supply of government bonds, is of course in a monopoly position.[8] Hence theoretical considerations warrant the conclusion that any undue social cost of such imperfectly competitive pricing as occurs in the banking industry rests on its private customers rather than on the government which enjoys the economic advantage of virtually unlimited competition in the sale of its securities.[9]

[8] By virtue of this fact, national monetary policy is capable of producing more or less arbitrary alterations of nominal interest rates and, hence, security prices; but such alterations are brought about not by price fixing in the usual sense but by administrative changes in certain economically significant legal and economic data which bankers do not control and to which they react competitively. In other words, open market operations, regulation of reserve requirements and rediscount policy serve not to make the competition among banks less perfect but rather to alter the operational conditions under which they compete for investment business.

[9] For reasons largely ulterior to fiscal considerations, the government, during the past decade, has offered its securities to the banks on terms which, under the circumstances, have been slightly more favorable to the banks than the market probably required. At least, this is a legitimate inference for one to draw from the fact that banks (even allowing for padding) have regularly readily oversubscribed Treasury offerings, in consequence of which the Treasury has informally rationed the distribution of its offerings among the banks. However, if such a policy results in any appreciable subsidization—

Moreover, there is no discernible reason for doubting that competition among banks can be relied upon to force a price on government credit which covers no more than a minimum proportion of the joint costs of operating the banking system. Because the costs of providing the government with credit are admittedly less than those incurred in providing credit to private customers, one would expect a differential in the prices of the two kinds of credit. That happens to be the case, as is revealed by the striking difference between interest rates on commercial loans and the yields on government securities. The differential is sufficient to suggest the probability that the "shift" in the primary function of the banking industry has resulted in competitive reductions in interest rates on governments to such an extent as to yield the banking industry little more than the direct costs involved in servicing the resulting new deposits, leaving most joint costs to be covered by income from private loans and investments. Certainly, there is scant evidence that competition has failed, during the past decade, to prevent bank exploitation of the United States Treasury.[10] In so far as cost is an acceptable criterion for determining the compensation which banks deserve for creating and lending credit to the government, can any better dispensation be devised than that provided by the market?

This suggests the interesting problem of how, if *interest* payments were abolished on bank-financed deficits, one would go about determin-

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which is doubtful—the government could easily revise the situation henceforth by selling its refunding and net new offerings to the highest bidders. To the extent that this has not been done, the explanation is doubtless to be found in the probability that such a policy would be attended by certain fiscal and non-fiscal disadvantages which outweigh the possible fiscal advantages.

[10] As is well known, the yields on bank-held government securities have ranged from 0 per cent to a maximum of a little over 2 per cent per annum during the past decade. Bank profits likewise have, until recently, been unprecedentedly low. For the years from 1934 to 1941, inclusive, the net profits per $100 of total capital accounts of FDIC affiliated banks were, respectively,—$5.49, $3.35, $8.35, $5.97, $4.68, $5.99, $6.08, and $6.72. (See *Annual Report of the Federal Deposit Insurance Corporation for the Year Ended December, 31, 1941,* p. 57.) Since the outbreak of the war, the great increase in the volume of earning assets, due to the rapid expansion of business activity and—more importantly—heavy government financing via the banking system, has naturally brought about enhancement of bank earning. For the years 1942 and 1943, respectively, net current operating earnings of FDIC affiliated banks were (before taxes and charge-offs) $9.45 and $10.80. Net profits after charge-offs and taxes were, for the same years, $6.26 and $8.58, respectively. (See *Annual Report of the Federal Deposit Insurance Corporation for the Year Ended December 31, 1943,* p. 37.)

While, on the face of things, the rate of return realized during the last year or two may appear to be more than adequate, in actuality it probably is not in view of the fact that it is computed on the basis of bank capital accounts whose total amounts, relative to either assets or liabilities, is subnormal and, from the point of view of responsible private banking, of questionable adequacy. In any case, there is no available evidence that present bank profit rates, before or after taxes, etc., are in excess of those being realized by industry generally.

ing the precise form and rate of compensation which it would be proper to pay the banks for providing deposit currency and other banking services to the government. There is no apparent reason to believe that a service-charge method of compensation would result in appreciable savings in government debt costs if competition were permitted to determine the amounts to be paid to the banks. On the other hand, if competition were not allowed to fix the price of bank services to the government, there would surely arise an economically delicate and politically sinister task of arbitrarily determining to what extent an enforced reorganization of the banking system is to be brought about in consequence of the withdrawal of government financial support. Perhaps it can justly be said that a part of the existing banking system is "redundant"—in some ideal economic sense—and, hence, that it might well be reorganized on a less decentralized and more economic basis. However, in the nature of the problem, generally acceptable criteria, not to mention practical means, for imposing the appropriate reorganization are lacking. Indeed, it is quite likely that the proposed method of allowing the banks a "reasonable" service charge (in lieu of interest) for their services to the government would create a situation in which the government found it politically impossible to enforce any desirable economies on the business through the withdrawal of its support. Furthermore, since credit creation is a process which occurs through the (uneven) actions and reactions of all of the banks comprising the system, would not different banks be affected capriciously and largely without reference to their operating costs or economic value to the community? So long as the existing money market remains unimpaired, it would seem that it can better be left to competition to effect the desirable economies and appropriate cost allocations in the banking business.

II. *The Preëmptive and Destructive Effect of Free Finance on the Banking System*

A policy of offsetting hoarding by injecting quantities of interest-free money would not only deprive banks of needed income during depression but also prevent them from enjoying their normal share of prosperity during a subsequent business upturn—in so far as drastic restrictions on private bank lending were relied upon to prevent inflation. The problem can perhaps be made more explicit by the following formulation.

If, for the purposes of analysis, one makes the legitimate assumption that, during an initial prosperity period, the volume of bank credit reached its maximum non-inflationary or equilibrium limit at (say) 50 billion dollars, and that, because of competition, net earnings of banks

were then comparable with those in other lines of business, *interest-free* government borrowing of any portion of this (presumably deflated and unused) credit potential, during a subsequent period of depression, would *pro tanto* recreate the money supply which, *ceteris paribus*, it would be possible or permissible for banks to lend during a subsequent prosperity period. The issuance of interest-free money during depression would require that the government retrieve this portion of the money supply *pari passu* with the expansion of private bank credit as full employment is approached—unless either the volume of private bank credit (and, hence, bank earnings) is to be restricted to the depression level or inflation is to be invited. Since virtually everybody objects to inflation, the choice would be between a fiscal policy calculated to extinguish the interest-free money injected previously or a policy which (perhaps by imposing drastic reserve requirements) is calculated to block the creation of the supplemental supply of interest-bearing private bank credit needed to sustain the banking system.[11] Obviously, in the former case, the expected tax saving would largely be set at naught and, in the second case, the possible tax saving could scarcely be considered a net social gain.

Apart from the damaging consequences of unusually drastic reserve requirements, it is more and more being recognized that the lending power of banks is impaired by a deficit spending policy which has the simultaneous effect of increasing deposits and, thereby, decreasing bank capital ratios. This has been one of the unfavorable results of the kind of deficit finance policy pursued during recent years. Because of low earnings, banks have, until recently, found it difficult to attract additional capital or to make adequate provision out of earnings for the maintenance of their capital ratios.[12] Obviously, this problem would be

[11] In principle, the necessity of choosing between these two alternatives is recognized by proponents of the 100 per cent money reform, although many of them think that as much compensatory income as banks deserve could be obtained from service charges.

As it is frequently formulated, the 100 per cent reserve plan would require the banks to surrender the portion of the federal debt which they hold in exchange for an equivalent amount of printing-press money and, to preclude possible inflationary credit expansion, on the basis of the new currency, reserve requirements would be raised (ultimately) to 100 per cent. Thus the plan would have the effect of terminating the government's obligation to pay further interest on and the principal of a large portion of its existing debt.

As is to be inferred from the preceding analysis, the 100 per cent money plan would probably prove to be subtly confiscatory of the interests of bankers and, perhaps in part, the vested interests of depositors as well. In any case, it should be noted that the fiscal gain would be a non-recurring one, *i.e.*, the fiscal windfall resulting from the terms of the transition to the 100 per cent system could be realized only once. Other things remaining the same, further retirement of government debt via interest-free fiat issues would invite inflation.

[12] Because of the fact that the decline in capital ratios in recent years has been accompanied by a great increase in bank holdings of government securities on which banks may borrow at the Federal Reserve, the view has gained currency in some quarters that

egregiously aggravated by a policy of interest-free deficit financing. To this extent also, the ability and willingness of banks to meet the legitimate capital requirements of private business during a business upswing might be seriously weakened. For the foregoing reasons, it seems quite certain that a policy of offsetting hoarding by interest-free multiplication of the money supply would have severely adverse or destructive effects on the earning power, social efficiency, profits and basic security of the banking system, not merely during the depression but also during the subsequent period of induced prosperity.

III. *The Politics of Quasi-Free Functional Finance*

An essential principle of "functional finance" is that "Taxation should . . . be imposed only when it is desirable that the taxpayers

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there is no longer a need for the maintenance of the same capital ratios which were once deemed necessary. This seems to the writer to be an untenable view. First of all, up until the year 1943, total bank capital accounts declined relative to total assets *exclusive of United States obligations.* (See annual reports of the FDIC.) In respect to bank assets other than governments, a sound banking system still requires that some minimum capital ratio be maintained. The writer would go further and say that, even in respect to government obligations which, of course, involve a minimum of risk of default, there is still reason for the maintenance of capital ratios at something like the 10 per cent minimum level heretofore insisted upon by the banking authorities. With bank investment accounts heavily loaded with government obligations which yield considerably less on average than 1.5 per cent per annum, only a small break in bond prices is required to wipe out the capital of many banks. Of course, as long as the government adheres to the policy of permitting banks to carry government obligations at cost or par, a fall in bond prices would not constitute a threat to bank solvency except in the unusual case of banks which might be forced to sell bonds in a depressed market or forced to borrow extensively from the Reserve banks in the face of persistently unfavorable operating conditions.

It should be emphasized, however, that the valuation advantage now enjoyed by banks is founded upon nothing more substantial than the present (unprecedented) *policy* and hence is subject to change upon the discretion of those charged with responsibility for banking policy. Moreover, it is difficult to see how continuation of this policy can be reconciled with the more important desideratum of maintaining a responsible private banking system capable of bearing the risks of private capital financing. Finally, it should be remembered that the vaunted liquidity of government obligations rests not so much on intrinsic qualities as on the prevailing monetary policies. The conditions which are likely to cause a fall in bond prices are also likely to necessitate a reversal of the government's easy money policy if inflation is to be avoided. In any event, should bond prices fall, the alternatives would appear to be the exposure of an inherently less secure banking system to exceptional hazards or the continued adherence to a monetary policy incompatible with the exigencies of inflation control. Hence, the fact that the Reserve banks stand ready at present to make advances at par on depreciated government securities cannot be accepted as justification for indifference to further deterioration in bank capital ratios.

[13] See Abba P. Lerner, "Functional Finances and the Federal Debt," *Social Research* (February, 1943). Also see "The Economics of Control," (New York, Macmillan, 1944), chap. 24, by the same author.

Interestingly enough, it may be said that those who advocate the 100 per cent money system, together with interest-free issues for the purpose of and to the extent necessary

shall have less money to spend, for example, when they would otherwise spend enough to bring about inflation."[13] Since it is assumed that inflation would come only after "full employment," the obligation to pay interest need be no more than a mere nominal burden until full employment is reached. As long as unemployment persists, funds to finance compensatory spending *and* pay interest on the accumulating debt might be raised by borrowing.[14] But, if it is assumed that government spending will sooner or later induce dishoarding, together with an accompanying threat of inflation, the logic of functional finance requires that the government raise not merely the amount of revenue which balances current expenditures, but also enough additional revenue to recapture (and thus permit withdrawal of) the redundant portion of the money supply.[15]

The foregoing considerations suggest that grave political dangers would attend a policy of quasi-free functional finance. Recent studies have served to establish the fact that American political and fiscal institutions are ill-adapted to the task of manipulating expenditures and taxes in the manner and on the scale contemplated by the theory of functional finance.[16] The administrative difficulties inherent in a compensatory budget system would likely be multiplied manyfold as a result of public resistance to taxes were it understood that the government does not have to pay interest on, or (perchance) even the principal

for maintaining some price level, are also, in principle, advocating functional finance. For striking confirmation of this, compare Professor Henry Simons's recent article, "On Debt Policy" (*Jour. Pol. Econ.*, Vol. LII, No. 4 [Dec., 1944], pp. 356-61), and Professor A. P. Lerner's works cited above. The essential difference (apart from the 100 per cent money feature) relates to the criterion by which the amount of new money to be introduced (or withdrawn) is to be determined.

[14] If permanent stagnation is assumed, it is theoretically possible that the government could indefinitely finance its deficits, in whole or part, by borrowing on whatever terms proved necessary—and without entailing any real burdens. This policy would likely be less disruptive of justly vested interests, the state of business confidence and the inducement to invest than would a policy of interest-free spending of new money. Therefore, under the assumed conditions of secular stagnation, little need for or advantage could be expected from a policy of free functional finance.

[15] Contrary to generally held opinion, repayment of the national debt is not necessarily deflationary. Unless the government raises more money through taxation than it disburses during a given period, and unless it hoards or extinguishes the excess, the retirement of public debt through taxation merely transfers existing purchasing power, leaving its total amount unaltered—assuming, as would normally be the case in a full employment economy, that the demonetization, *via* repayment, of the bank-held portions of the debt is accompanied by the simultaneous monetization of corresponding amounts of private debt. Hence, any circumstances which require that the government retrieve excess purchasing through taxation require levies exceeding those needed merely to transfer currently needed resources to the government.

[16] See, *e.g.*, Chas. C. Abbott, "Administration of Fiscal Policy," *Harvard Bus. Rev.* (Autumn, 1944).

of, its debts. In the face of an inflation threat, or the need to pave the way for the banks to realize a due measure of income from the monetization of private credit, public officials might stoutly insist that higher taxes are necessary to extinguish the monetized non-interest-bearing national debt; but, in the light of experience, one can scarcely be optimistic about the willingness of the public to accede to any substantial increases in taxes merely for the purpose of enabling the government to retire part of the money supply from circulation.

Even if the principle of taxation for deflation were to command general support, it would by no means solve the inevitable problem of whose money is to be taken (in taxes) for retirement from circulation. Whenever tax bills are under consideration, it is the tendency of every group to seek tax immunity for itself and the imposition of the required taxes on other groups. Can it be doubted that powerful impetus would be given to this tendency, with disastrous consequences, if it were understood that the taxes to be imposed were needed not to service the debt but purely for the purpose of combatting what the public would surely consider an abstract, hypothetical danger—namely, a possible inflation or the possible inability of the banks to survive under the existing restrictive conditions? The entire probability is that opposition to taxes would steadily mount simultaneously with demands for progressively larger subsidies, bonuses, pensions, doles, public works and other expenditures. Existing restraints on fiscal irresponsibility would dissolve and very likely bring on economic chaos.

It is no sufficient answer that these dire consequences might be escaped by giving the monetary authority plenary power to fix, at certain intervals, the maximum amount of permissible government expenditures and impose whatever taxes might be deemed necessary to prevent inflation and preserve a proper measure of private business opportunities for the banks. If the monetary authority were endowed with independent, "non-political" status, it is doubtful that it could long retain it. The public would not supinely acquiesce in the (often necessarily) disagreeable decisions and policies of the monetary authority. Through its national legislative representatives, the public would surely demand that the authority be shorn of its "bureaucratic" power to decide such vital issues as who is going to pay how much in taxes and how much is to be spent during any given fiscal period. The fact is that social restraints on selfish aggrandizement are necessary if the sense of individual responsibility is not to be destroyed or fatally corroded. In the field of fiscal policy, the necessity of "raising" money by means of taxation or borrowing, on pain of paying interest, imposes a salutary and necessary restraint which would be lost under the proposed system of financing.

IV. *Conclusion*

The analysis of this paper leads to the conclusion that there is little merit in the arguments for the abrogation of, and the substitution of service payments for, the present system of interest payments on bank-financed government deficits and debts. Specifically, it has been shown that: (1) the circumstances of bank-credit creation constitute an effective refutation of the argument that banks unwarrantedly encroach on the government's prerogative of creating and regulating the currency; (2) the present system of government borrowing from the banks does not entail excessive or undue cost burdens for the government or the taxpayer; (3) the substitution of a service-charge basis of compensating banks for their "services" of creating and handling bank credit in behalf of the government would not yield any net social advantage; and (4) the financing method in question would be subversive of economic discipline and fiscal responsibility. Under the most favorable circumstances, the political dangers are far too serious to be compensated by any prospective saving in tax burdens. In fine, the most practical and equitable method of financing "functional" (or other) deficits and debts is the orthodox one of borrowing at the rate of interest which the market may require.

THE RAILWAY LABOR ACT AND RAILWAY LABOR DISPUTES IN WARTIME

By HERBERT R. NORTHRUP*

I. *Introduction*

That President Truman should use railway labor legislation as a model in asking a law to curb strikes should not be surprising. For more than fifty years labor relations in the railway industry have been subject to federal regulation.[1] The 1934 amendments to the Railway Labor act of 1926[2] represent the climax of the evolution of public policy toward collective bargaining on the railroads. The results of this federal regulation have met with the highest commendation. After only one year of experience as the chief administrative agency of the amended act, the National Mediation Board reported that the act expressed "a model labor policy based on equal rights and equitable legislation."[3] Testifying before a Congressional committee, former Secretary of Labor, Frances Perkins, declared that "the Railway Labor act embodies the fullest and most complete development of mediation, conciliation, voluntary agreement and arbitration that is to be found in any law governing labor relations" and that the "administration of the Railway Labor act . . . is an outstanding example of effective administration of a labor law."[4] Many students of labor relations have confirmed these official views.[5]

An examination of the reasoning behind this viewpoint, however, reveals no careful analysis of the provisions of the act or of the decisions and awards of the National Mediation Board and the National Railroad Adjustment Board, the agencies which administer it. The sole criterion used by proponents of the act is the strike record in the industry. They

* The author, a visiting member of the economics departments of Columbia and New York Universities, gratefully acknowledges several penetrating suggestions by Dr. B. M. Stewart and Professor Lois MacDonald.

[1] For early railway legislation, see C. O. Fisher, "Use of Federal Power in Settlement of Railway Labor Disputes," Bull. No. 303, U. S. Bureau of Labor Statistics, 1922; and H. D. Wolf, *The Railroad Labor Board* (Chicago, Univ. of Chicago Press, 1927).

[2] 48 U. S. Stat. 926 (1934).

[3] *First Annual Report of the National Mediation Board,* 1935, p. 1.

[4] Hearings before the Committee on Commerce, U. S. Senate, 75th Cong., 3rd sess., on S. 3078. Pt. 10 (Washington, Supt. Docs.), pp. 968-99.

[5] *E.g.,* H. D. Wolf, "Railroads," in *How Collective Bargaining Works* (New York, Twentieth Century Fund, 1942); H. S. Kaltenborn, *Governmental Adjustment of Labor Disputes* (Chicago, Foundation Press, 1943), chap. III.

have merely observed that industrial peace prevails on the rails and have attributed this condition to the Railway Labor act and its administration.

On the other hand, there have been several studies[6] and court decisions[7] adversely critical of the procedure and awards of the National Railroad Adjustment Board, which has jurisdiction over disputes arising out of the interpretation of collective agreements that have not been resolved by union-carrier grievance machinery. In other studies,[8] the present writer has raised questions concerning the manner in which the National Mediation Board has defined the bargaining unit; and concerning the Mediation Board's apparent disregard for the rights of Negroes who have been deprived of long-held jobs by agreements, effected with the aid of the Mediation Board, between carriers and unions which admit only white workers.

The Scope of this Article

Critics of the Railway Labor act, however, have thus far confined themselves to particular phases of the administrative machinery of the act and, like the proponents of the act, have made no investigation of results of the operation of its disputes machinery. This article surveys the more important railway dispute cases which have occurred since 1941 and draws certain conclusions from the manner in which they were handled. Since the period 1941-45 was an emergency period and includes only a portion of the history of the Railway Labor act, the conclusions may not apply to operations under the act in normal times. On the other hand, the extent to which the Railway Labor act met the test of the emergency period is of real significance if its procedures are to

[6] Administrative Procedure In Government Agencies, S. Doc. 10, Pt. 4, 77th Cong., 1st sess., 1941; L. K. Garrison, "The National Railroad Adjustment Board: An Unique Administrative Agency," *Yale Law Jour.,* Vol. XLVI (1937), pp. 567-98; W. H. Spencer, *The National Railroad Adjustment Board* (Chicago, Univ. of Chicago Stud. in Bus. Admin., Vol. VIII, no. 3, 1938); note, "Judicial Review of Awards by the National Railroad Adjustment Board," *Yale Law Jour.* Vol. LI (1942), pp. 666-73; and S. H. Slichter, *Union Policies and Industrial Management* (Washington, Brookings Inst., 1941), pp. 195-96.

[7] *E.g., Nord v. Griffen,* 86 F. (2d) 481; cert. den., 300 U.S. 673 (1937), in which the appellate court said: "The trial below and this appeal do not involve the merits of the controversy. They involve solely the question of whether the appellee is to be bound by an order of an administrative board in a proceeding to which he was not a party, entered at a hearing of which he had no notice. The mere statement of the proposition is conclusive of its soundness. The rights of the plaintiff are protected by the Fifth Amendment." For a list of supporting cases, see *National Collective Bargaining Policy* (New York, The Industrial Relations Counselors, 1945), p. 86, note 41.

[8] Herbert R. Northrup, "The Appropriate Bargaining Unit Question Under the Railway Labor Act," *Quar. Jour. Econ.* Vol. LX, No. 2 (Feb., 1946), pp. 250-69; and *Organized Labor and the Negro* (New York, Harper, 1944), pp. 58-62.

be used as a model for labor legislation of wider application; for it is precisely in times of emergencies and stress in labor relations that effective labor adjustment machinery is most essential.

II. *Railway Labor Disputes, 1941-45*

The 1941 Wage Movement

In the early summer of 1941, the standard railway unions served demands on the nation's railroads for substantial wage increases. The five operating unions requested a 30 cent per hour increase; the fourteen nonoperating unions, a 30 per cent increase, paid vacations, and an increase of the minimum rates for unskilled workers from 36 cents to 70 cents, and for skilled workers from 85 cents to $1.15. After negotiations broke down, the National Mediation Board proffered its services, and when mediation failed, the Board suggested arbitration. The carriers agreed, but the unions rejected this procedure. After a vote taken by the unions showed more than 90 per cent in favor of strike action, the Mediation Board notified the President that an emergency existed and he immediately appointed a five-man emergency board, headed by Dean (now Senator) Wayne L. Morse, to hear the dispute and report to him. In accordance with the act's procedure, a possible strike was therefore delayed until thirty days after the emergency board reported.

The Morse report, issued on November 5, 1941, recommended increases of 7.5 per cent for operating employees, of 9 cents for the nonoperating groups, and of 7½ cents for Railway Express Agency employees. In addition, the nonoperating group was awarded one week's vacation with pay and certain other adjustments were recommended for the short-line roads. All adjustments were to be on a temporary basis, to be effective September 1, 1941, and to terminate December 31, 1942, unless extended by agreement of the parties.

The carriers accepted the recommendations, but the unions found them completely unsatisfactory. Their leaders hurried to Washington to see the late President Roosevelt and other officials in the Administration and Congress in order to urge a more favorable settlement. The five operating unions set December 5-7 for a nation-wide strike; the nonoperating group set no strike date, but announced that it would refuse the recommendation none the less.

Attempting to avoid a stoppage, the President conferred with the parties on November 18 and 19. In a move which was totally without precedent under the Railway Labor act, the President reconvened the emergency board and in effect suggested to it that a different set of recommendations should be submitted. This time, the emergency board

acted as a mediation panel, instead of a fact-finding body, and, with the alleged aid of pressure from the President, secured an agreement satisfactory to the unions. It provided for increased vacations, a 10.5 per cent increase to operating employees, and a 10 cent per hour increase to the nonoperating groups, including Railway Express personnel. Moreover, these adjustments were made permanent. The carriers were mollified with promises of increases in passenger and freight rates, which the Interstate Commerce Commission soon put into effect.[9]

Thus President Roosevelt was able to avert a nation-wide rail strike scheduled for Pearl Harbor Day. By so doing, however, he assisted the rail unions to reject a recommendation arrived at by means of the disputes machinery which had been established largely at their behest.

The Toledo, Peoria and Western Strike

The first major strike which faced the National War Labor Board involved railway employees. Train and engine service workers on the Toledo, Peoria and Western Railroad were called into strike on December 28, 1941, by the Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Firemen and Enginemen. The strike was the culmination of a long-standing dispute involving principally the question of whether working rules in effect on other roads should be introduced on the Toledo, Peoria and Western. The Mediation Board was unable to resolve the dispute either by mediation or by voluntary arbitration, although the brotherhoods, which had originally refused the latter procedure, consented to it after Pearl Harbor. The carrier demanded the appointment of an emergency board, but refused to arbitrate, and not even the President could induce it to agree otherwise. Faced with such defiance, the President on March 21, 1942, ordered the Toledo, Peoria and Western taken over by the government and operated by the Office of Defense Transportation. The brotherhoods called off the strike, the strikers were reinstated in their jobs, and an arbitrator was appointed by the War Labor Board. When the president of the carrier refused to appear, the arbitration hearing was conducted in his absence. On September 23, 1942, the War Labor Board issued a directive order putting the arbitrator's award into effect with certain modifications, and providing further that the Toledo, Peoria and Western should be continued under government operation until such time as the carrier executed agreements with the brotherhoods containing the terms of its directive order.[10]

It should be noted that in the Toledo, Peoria and Western case the

[9] The history of this case is found at 9 LRR 54, 252, 273, 296, 363, and 366.

[10] See 10 LRR 41, 73, 113, 145, 631; 11 LRR 216, 337.

provisions of the Railway Labor act were not followed to conclusion. After the Mediation Board failed to obtain an agreement to arbitrate, no emergency board was appointed. The Office of Defense Transportation proposed arbitration, but to no avail. The United States Conciliation Service then intervened. When it failed to achieve results, the Secretary of Labor certified the case to the War Labor Board, which *directed* arbitration under Section 8 of the Railway Labor act, although that act provides only for voluntary arbitration,[11] and although Executive Order 9017 which created the War Labor Board provided (Par. 7) "Nothing herein shall be construed as superseding or in conflict with the provisions of the Railway Labor Act. . . ."[12]

The National Railway Labor Panel

On May 21, 1942, President Roosevelt issued Executive Order 9712, creating supplementary machinery to handle railway labor disputes during the emergency.[13] The order established a nine-man panel from which emergency boards of three persons could be set up whenever a union—not a carrier—declared, or the chairman of the panel found, that war production was threatened by an emergency railway labor situation.

Executive Order 9712 neither amended nor supplanted the Railway Labor act. It reaffirmed the purposes and procedures of the act, but supplemented it "in order to adjust the policies and procedures under said Act to the requirements of the war emergency." It proposed to accomplish this in two ways. First, it provided for the appointment of emergency boards without such appointment being conditioned on the holding of affirmative strike votes, the setting of strike votes, or the certification to the President by the Mediation Board that substantial interference with commerce was threatened; and, second, it gave exclusive jurisdiction of railway labor disputes to railway labor agencies and thus sought to avoid jurisdictional disputes between them and the War Labor Board, such as occurred in the Toledo, Peoria and Western case.

[11] That arbitration under the Railway Labor act may not be perfectly voluntary even in peacetime is indicated by the United States Supreme Court in the case *Brotherhood of Railroad Trainmen* v. *Toledo, Peoria and Western Railroad Company,* 321 U.S. 50 (1943), in which an injunction granted to the railroad to prohibit certain actions of the striking unions which had led to violence, was dissolved because the railroad did not exhaust the peaceful settlement procedures—*i.e.,* arbitration—which the Norris-LaGuardia act, according to the court, requires for the granting of an injunction.

[12] On October 1, 1945, following the end of hostilities, the T.P. & W. was returned to private ownership. No agreement was reached between the carrier and the unions beforehand, however, with the result that a strike was called which has since continued in effect, and which has resulted in death and bloodshed.

[13] The text of the order is found at 10 LRR 443.

In establishing the National Railway Labor Panel, the President followed the traditional American practice of treating railway labor differently from other industrial groups. In this instance, not only was a special agency created, but settlement was provided for purely on a voluntary basis (except in so far as public opinion might be compelling). Emergency boards under Executive Order 9712, as those under Section 10 of the Railway Labor act, merely made reports and recommendations. They received no authorization, such as was conferred on the War Labor Board, to settle disputes by "directive orders." Hence they could be repudiated without technically defying a government war agency.[14]

Executive Order 9299

On September 18, 1942, the fifteen nonoperating railway unions served notice on the carriers that they desired substantial wage increases. Negotiation and mediation broke down, but before an emergency board could be appointed from the National Railway Labor Panel, a controversy arose as to whether the award of a panel would be subject to review by the National War Labor Board in accordance with the Stablization act which became law on October 2, 1942. The carriers favored and the unions opposed any such review by the War Labor Board. The latter won their point with the President. On February 4, 1943, he issued Executive Order 9299, which provided that awards of boards appointed from the National Railway Labor Panel would become effective within thirty days after their issuance "unless and except to the extent that the Economic Stabilization Director shall otherwise direct."[15] Executive Order 9299 further provided that all voluntary wage adjustments concerning carriers subject to the Railway Labor act were removed from the jurisdiction of the War Labor Board and placed under the direction of the chairman of the National Railway Labor Panel, who was instructed to process them in accordance with the Stabilization act.

The 1942-43 Nonoperating Case

Soon after the issuance of Executive Order 9299 an emergency board, headed by Professor I. L. Sharfman, was appointed to hear the nonoperating unions' wage case. Hearings were still in effect on April 8, 1943, when the President issued Executive Order 9328[16]—the hold-the-

[14] Technically, of course, W.L.B. orders were only "advisory." To all but certain extremists, however, the W.L.B. order was a command to be obeyed.

[15] The text is found at 6 War Lab. Rept. V.

[16] The text is found at 7 War Lab. Rept. VII.

line order. The Sharfman board adjourned its hearings in an attempt to examine the effect of Executive Order 9328 on the deliberations and also in an attempt to settle the dispute by mediation. Finally, on May 26, 1943, the board issued an award granting the unions an 8 cent general increase and indicating that, since its proceedings commenced prior to its issuance, Executive Order 9328 was not taken into account.

The carriers filed a protest with Judge Vinson, newly appointed Director of Economic Stablization, maintaining that the award was contrary to stabilization principles. Judge Vinson set it aside on June 23, 1943, stating that the award violated the Little Steel formula, but that some increases were warranted on that basis, and others to the lower paid workers on the basis of "substandard" wages.[17] Judge Vinson attempted to reconvene the board, but Professor Sharfman refused, saying he had no authority to rehear the issues. Dr. William M. Leiserson, chairman of the National Railway Labor Panel, also declined to reconvene the Sharfman board.

Meanwhile, the unions protested bitterly against Judge Vinson's act and took steps to circumvent it. They declared that President Roosevelt had actually urged them to accept the award of the Sharfman board before Vinson set it aside. They also induced the carriers to agree to pay the 8 cent general increase "subject to any existing requirement of law" and then arranged for the introduction in Congress of joint resolutions providing that they should receive the 8 cent general increase, the stabilization laws to the contrary notwithstanding. This resolution passed the Senate on December 9, 1943, by a vote of seventy-four to four, with Senate Majority Leader Barkley and (then) Senator Truman leading the fight in behalf of the unions. Before the House of Representatives acted, however, the President, by Executive Order 9328, appointed a new emergency board headed by Judge Shaw to reëxamine the whole wage question. In so doing, the President acted not in accordance with the Railway Labor act, but pursuant to his war powers.

The Shaw board reëxamined the evidence and recommended increases varying from 10 cents per hour for the lowest paid to 4 cents per hour for the highest paid, in accordance with the principles laid down by Judge Vinson. The unions, however, rejected this award. Then in January, 1944, after the President had taken over the railroads to avert a nation-wide strike of the operating unions and had awarded those unions extra compensation "in lieu of overtime pay,"[18] he made a similar award to the nonoperating unions. The carriers and these unions

[17] *Opinion of Stabilization Director,* 9 War Lab. Rept. XII.

[18] See below, pp. 332-34.

thereupon reached agreement on increases varying from 9 to 11 cents per hour. Although this meant that all the nonoperating workers received greater increases than were originally awarded by the Sharfman board and which he had rejected, Judge Vinson approved this settlement arranged by the President.[19]

The Diesel Case

As early as 1937 the Brotherhood of Locomotive Fireman and Enginemen and the Brotherhood of Locomotive Engineers had set forth separate demands for a change in the methods of payment of engineers and firemen working on diesel engines and for the employment of additional crew members on diesels. The controversy was postponed for various reasons and was finally heard by a board of the National Railway Labor Panel, which issued its report on May 24, 1943. The report denied most of the requests of the unions for new methods of payment which would have resulted in substantially increased wages; denied the attempts of either the firemen or the engineers to force the employment of additional helpers on diesel engines, a demand which would have created thousands of featherbedding jobs if it had been granted; and provided that in those instances where a second man or helper was to be employed on diesel engines in accordance with previous agreements, such persons should come from the ranks of the firemen rather than the engineers, thus ending a jurisdictional dispute of long standing. The board did grant a few of the unions' demands which, in effect, created new job classifications and higher wages for engineers and firemen who are employed on the heaviest type of diesel locomotives, and made other minor adjustments.

The railroads were satisfied with the report of the emergency board which had based its decision on thirty-nine volumes of evidence as well as numerous exhibits, briefs, etc. Mr. D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen, however, was quite displeased and he proceeded to Washington to confer with President Roosevelt. On May 29, 1943—just five days after the emergency board had made its report—Mr. Roosevelt wrote J. J. Pelley, president of the Association of American Railroads, in part as follows:

> I am advised that the Emergency Board report is quite unsatisfactory to the Brotherhood of Locomotive Firemen and Enginemen and that some of the

[19] Hearings before the Senate Committee on Interstate Commerce, 78th Cong., 1st sess., on S. J. Res. 91; and Hearings before House Committee on Interstate and Foreign Commerce, 78th Cong., 1st sess., on S. J. Res. 91 and H. J. Res. 187 (Washington, Supt. Docs., 1943). Both contain a complete account of the dispute, including reports of the Sharfman and Shaw boards, except for the final terms of the settlement, which are found at 13 LRR 615.

most important questions have not been resolved. As you may well understand, I have not had time to study the report in detail. I am anxious, however, that in these troublesome times everything possible and fair—but within the National Policy—be done to dispose of management-labor disputes without in any way interfering with the full and adequate prosecution of our war program.

This situation suggests the advisability of arranging a joint conference of management and employee representatives for the purpose of endeavoring to resolve the points in question. Will you be good enough to initiate steps to bring about such a conference or, if this does not come within your functions, will you please see that it is referred to the proper representatives of the Carriers. I understand that Mr. Robertson, President of the Brotherhood of Locomotive Fireman and Enginemen, is prepared to enter into such a joint conference.

On June 5, 1943, Mr. Pelley replied in part:

It is noted that the Emergency Board report is not satisfactory to the Brotherhood of Locomotive Firemen and Enginemen and that, according to the advice reaching you, some of the most important questions have not been resolved and a further joint conference is suggested. Candor compels me to say, however, that a careful study of the report indicates that all questions involved in the dispute were definitely resolved by the Board, and there would, therefore, be nothing to consider in a joint conference except questions which were clearly and definitely disposed of.

We will appreciate, of course, and share with you your anxiety that in these troublesome times everything possible and fair—but within the National Policy—be done to dispose of management-labor disputes without in any way interfering with the full and adequate prosecution of our war program. Therefore, in view of your understanding that Mr. Robertson, President of the Brotherhood of Locomotive Firemen and Enginemen, is prepared to enter into a joint conference, and, in accordance with your request that one be held, this is to advise that I will be glad to immediately arrange to have such a conference initiated and at as early a date as possible.

As a result of the conference suggested by the President, the carriers agreed to substantially more increases than the emergncy board had rcommended, and these became effective upon approval by the chairman of the National Railway Labor Panel on August 29, 1943.[20]

1943 Operating Case

Early in 1943 the five operating brotherhoods made demands for a 30 per cent general increase and other concessions. When mediation failed, it was agreed to postpone the appointment of an emergency

[20] The entire record of this case has been published in two large volumes by the Eastern Carriers' Committee, New York.

board until the completion of the diesel and nonoperating cases. Consequently, the board appointed to hear the case, which was headed by Judge Stacy, was not ready to make its report until September 25, 1943, at which time it recommended a 4 cent general increase for operating crews.

Not only did the operating brotherhoods reject this award, but, terming it an "insult," they began plans for a nation-wide strike. At this point President Roosevelt intervened and, failing to mediate, offered to arbitrate the dispute personally. Two of the five unions—the Brotherhood of Locomotive Engineers and the Brotherhood of Railroad Trainmen—accepted this offer and called off their strike plans, but the other three—the Brotherhood of Locomotive Firemen and Enginemen, the Order of Railway Conductors, and the Switchmen's Union—all rejected his offer. Whereupon, on December 27, 1943, the President, by executive order, took over the railroads in order to avert the threatened stoppage.[21]

The President promptly awarded one week's vacation with pay and an additional 5 cent per hour increase to the members of the trainmen's and engineers' unions. He stated that the latter was compensation for the fact that railroad crews often had to spend time away from home; and also compensation for the fact that railroad employees were not covered by the provisions of the Fair Labor Standards act, which provide for time and one-half after forty hours' work in any week.[22]

The same award was offered to the firemen, the conductors, and the switchmen, and they shortly accepted it, with some minor administrative modifications. The railways were then returned to private ownership.[23]

The Pacific Electric Railway Case

The Pacific Electric Railway Company, a subsidiary of the Southern Pacific system, and a carrier within the meaning of the Railway Labor

[21] It should be noted that President Roosevelt did not take over the railroads under provisions of the War Labor Disputes act of June 25, 1943. His authority to do so was not clear since Section 2 (c) of that law excluded railways from the definition of "war contractor." Consequently, he acted pursuant to the same 1916 legislation by which President Wilson took over the railways in 1917. Had President Roosevelt acted under the War Labor Disputes act, his action in granting additional adjustments to the carriers would apparently have violated Section 4 of that act which required government operation according to conditions previously in effect.

[22] Apparently the President did not consider that most railwaymen do not spend time away from home; and that the effect of such absences has long been considered in determining wages. The President apparently also did not take note that many rules secured by the brotherhoods already provided more generous over-time compensation prior to his award than is required by the Fair Labor Standards act.

[23] See 13 LRR 142, 517 and 545 for a history of this dispute.

act, is engaged principally in transporting interurban and local city passengers and interline and local freight in the Los Angeles metropolitan area in which the Los Angeles Railway Company also operates. The Los Angeles Railway is not, however, covered by the Railway Labor act. The two systems serve the urban area of Los Angeles in common, although the Pacific Electric is primarily a freight carrier with much more extensive operations covering three additional counties. The manner in which labor relations on these neighboring carriers have been handled during the war illustrates the difficulties of duplicate agencies in the labor relations field.

In May, 1943, an emergency board appointed from the National Railway Labor Panel awarded increases of approximately 13 cents per hour to the operating employees of the Pacific Electric Railway Company. During the same period, the Los Angeles Railway Company and the union of its employees applied to the War Labor Board for a voluntary 10 cents per hour increase. On July 19, the W.L.B. denied the application of the Los Angeles Railway Company. On the same day, Judge Vinson, after first extending for thirty days the time limit for the effective date of the Pacific Electric emergency board award, reduced it from 13 cents per hour to 3 cents per hour, on the basis of comparable rates paid by the Los Angeles Railway Company.

The actions of Judge Vinson and the War Labor Board precipitated stoppages on both carriers. The president of the Brotherhood of Railroad Trainmen, whose union is the representative of the Pacific Electric's operating employees, visited Washington and consulted with Vinson's superior, Justice James F. Byrnes, then Director of War Mobilization. Justice Byrnes appointed a fact-finding committee of three judges to survey the whole West Coast transit situation. On September 10, 1943, this fact-finding board submitted its report which called attention to the increased workload on various urban transit lines. On the basis of this report, the War Labor Board reconsidered the case of the Los Angeles Railway Company and approved a 5 cents per hour increase and certain other adjustments which had previously been denied. Since the procedure of the National Railway Labor Panel provided for no means of reconsideration, President Roosevelt, by Executive Order 9379, issued pursuant to his war powers, appointed a new emergency board. It reconsidered the Pacific Electric case and recommended an additional 5 cents per hour which Judge Vinson approved on October 24, 1943.

The adjustments on these neighboring lines did not end here, however. In September, 1944, the War Labor Board established its "workload" bonus system for urban transit lines and, pursuant thereto, employees of the Los Angeles Railway Company received bonuses of

5 to 7 cents per hour. The see-saw continued when, effective January 1, 1945, a board of the National Railway Labor Panel awarded the employees of the Pacific Electric Railway Company 5 cents per hour based on President Roosevelt's award to the operating crews of the standard railways after he had taken over the railroads in December, 1943; and an additional 3 cents per hour, apparently in lieu of the fact that no W.L.B. workload bonus was available to them.[24]

The Chicago-Milwaukee Interurban Cases

In Chicago a situation exists similar to that in Los Angeles. The Chicago, North Shore and Milwaukee and the Chicago, Aurora and Elgin electric railroads have been designated carriers within the Railway Labor act; and by means of wage increases secured pursuant to the procedure of the act, the employees of these lines have been able to boost their wages considerably above the wages paid by competing interurban transit carriers which are outside the coverage of the act. The wages on both the North Shore and the Chicago, Aurora and Elgin, however, are below those paid on standard railroads, which is the wage goal of the employees of these interurban lines.

An emergency board appointed from the National Railway Labor Panel awarded these employees increases of 16 cents per hour, but on July 9, 1943, the same day on which the award was to go into effect, Judge Vinson reduced it to 14 cents on the grounds that the Little Steel formula would not permit a greater amount. The following year a second emergency board gave these employees an additional 5 cents based on the award that the President gave to the operating unions after he took over the railroads in December, 1943.

The Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Firemen and Enginemen, who represent these employees, then called strikes in protest against the meagerness of the latter award. The strikes lasted for two weeks, after which the unions accepted the award and the employees returned to work.[25] Soon thereafter, the unions set in motion machinery to start the case all over again.

[24] *Los Angeles Railway Corp.*, 12 War Lab. Rept. 252; *Pacific Electric Railway Company: Opinion of Economic Stabilization Director*, 11 War Lab. Rept. VIII; *Local Transit Bonuses*, WLB Press Releases Nos. B-1751 and B-1751a, September 15 and 22, 1944; *Report to the President by the Emergency Board Appointed Pursuant to Executive Order 9172 to Investigate Dispute between Pacific Electric Railway Company and Certain Operating Employees*, 1944; and *Report of the Special Committee to Investigate Transit Systems of the Pacific Coast Area*, 1943.

[25] *Chicago, N.S., and Milwaukee Ry. Co.: Opinion of Stablization Director*, 9 War Lab. Rept. XV; *Report to the President by the Emergency Board Appointed Under Section 10 of the Railway Labor Act to Investigate Disputes Between Chicago, N.S., and M. Ry. Co., et al.*, 1944; and 15 LRR 363.

The Bingham and Garfield Case

On November 8, 1944, President Roosevelt appointed an emergency board to prevent a strike by members of the Brotherhood of Locomotive Firemen and Enginemen on the Bingham and Garfield railway, an Utah carrier engaged principally in ore transport. The union's major demand was that a "fireman," or helper, be added to the carrier's electric switch engines in the interest of safety. The board found that the demand was a "featherbedding" request. Safety, it found, could not be involved since over a twenty-year period only one accident had occurred, and that involved neither death nor personal injury. During this period, the Bingham and Garfield had transported 344,000,000 tons of ore. Hence, the emergency board recommended that the union request be denied. The Brotherhood of Locomotive Firemen and Enginemen refused to accept the board's recommendation, and made plans to strike, with the result that President Roosevelt took over the railroad for the duration of the war.[26]

The Amendment to the Stabilization Act of 1944

Not only were the railroad unions successful in overriding the attempts of Judge Vinson to veto wage increases which he found to contravene wage stabilization policy, but they also succeeded in removing the jurisdiction of the stabilization office over awards of emergency boards appointed either from the National Railway Labor Panel, or pursuant to Section 10 of the Railway Labor act. At their behest, a rider was passed to the Stabilization act when it was renewed in June, 1944, which reads:

> In any dispute between employees and carriers subject to the Railway Labor Act, as amended, as to changes affecting wage or salary payments, the procedures of such Act shall be followed for the purpose of bringing about a settlement of such dispute. Any agency provided for by such Act, as a pre-requisite to effecting or recommending a settlement of any such dispute, shall make a specific finding and certification that the changes proposed by such settlement or recommended settlement are consistent with such standards as may then be in effect, established by or pursuant to law, for the purpose of controlling inflationary tendencies. Where such findings and certification are made by such agency, they shall be conclusive, and it shall be lawful for the employees and the carriers, by agreement, to put into effect the changes proposed by the settlement or recommended settlement with respect to which such finding and certification were made.[27]

[26] *Report of the Emergency Board Appointed Pursuant to Section 10 of the Railway Labor Act to Investigate Dispute Between Bingham and Garfield Railway Company and its Employees,* etc., 1944.

[27] Pub. Law No. 383, 78th Cong., Sec. 202.

A situation analogous to that created by this rider would have existed if Congress had enacted a law providing that the recommendation of a panel appointed by the War Labor Board could have been legally accepted and put into effect by the parties, regardless of whether the WLB or the Stabilization Office considered it to contravene wage stabilization policy, so long as the panel certified that the recommendation did not do so.

The Illinois Central Case

On May 24, 1945, President Truman appointed an emergency board pursuant to Section 10 of the Railway Labor act in order to avert a threatened strike on the huge Illinois Central System by the Brotherhood of Locomotive Firemen and Enginemen. The emergency board found that the trouble was essentially a jurisdictional dispute between the above named brotherhood and the Brotherhood of Locomotive Engineers over the seniority status of demoted engineers and promoted firemen, although it also involved a claim which had been submitted to the National Railroad Adjustment Board by the firemen and then withdrawn "with prejudice" to a further submission.

After noting that the jurisdictional question could have been settled by recourse to the Adjustment Board except for an agreement among the unions not to submit jurisdictional claims to that agency, the emergency board recommended a compromise settlement. As to the second issue, the emergency board found that a withdrawal "with prejudice" of a case from the Adjustment Board foreclosed further adjudication.

Dissatisfied with the report, the Brotherhood of Locomotive Firemen and Enginemen called a strike for August 24, 1945. At this point, John W. Snyder, Director of War Mobilization and Reconversion, intervened, and called the parties and the emergency board to Washington in an attempt to mediate the dispute. When mediation failed, President Truman ordered the railroad seized, and the union called off the strike. Thus the first industrial establishment seized to avert a strike after war came and the first after war ended in both instances were railroads.[28]

III. *Concluding Remarks*

The record of labor adjustment under the Railway Labor act during the war period does not lend much support to those who see in the procedures of the act a "model" labor law. Much of the failure of the act to maintain industrial peace unaided during the war has been

[28] *Report of the Emergency Board appointed May 24, 1945 in re . . . Illinois Central System*, 1945; New York *Times*, August 24, 25, 1945.

blamed on Judge Vinson. When he modified downward awards of emergency boards in the 1943 national nonoperating, the Pacific Electric, and the Chicago-Milwaukee interurban cases, he was widely criticized for alleged unwarranted interference with the tried and true procedures of the Railway Labor act. There is no doubt that he acted without either diplomacy or a proper consideration of the delicate tensions inherent in labor relations, especially by his method of issuing his directives almost at the moment before an award would have automatically gone into effect.

If, however, it be granted that Judge Vinson acted without tact, it must also be granted that he acted in accordance with the law. As he pointed out, "The Stabilization Act of October 2, 1942, does not exempt railway employees or . . . say that all wages are to be stabilized except those of railway workers. . . ."[29] And Executive Order 9299, which was issued at the request of the railway unions, which were anxious to avoid going before the National War Labor Board, did provide that awards of emergency boards were to become effective thirty days after their issuance "unless and except to the extent that the Economic Stabilization Director shall otherwise direct." That Judge Vinson interpreted this language to mean that he had the same authority to require that the awards of railway emergency boards conform to the wage stabilization program as he did to require of War Labor Board directive orders, is open neither to challenge nor criticism unless one believes that railway labor is entitled to benefits and privileges not available to other industrial workers.

Judge Vinson rejected this tenet and attempted to treat all industrial workers alike. He was rebuffed by the President who gave the nonoperating employees more than the original award which Judge Vinson had vetoed; and by Congress, which removed the awarded of emergency boards from the jurisdiction of the stabilization director.

The charge that Judge Vinson's directives interfered with the procedure of the Railway Labor act must also be placed in its proper relationships. True, he modified awards which had been made pursuant to the procedure outlined in the act. But both the Economic Stabilization Office and the War Labor Board have modified downward or totally disapproved thousands of voluntary wage applications submitted by employers and unions where such applications have proposed adjustments deemed incompatible with the wage stabilization program. Many of these applications were the results of agreements achieved by mediation by the United States Conciliation Service or by state mediation bodies. These disapprovals have caused considerable

[29] Hearings before House Committee on Interstate and Foreign Commerce 78th Cong., 1st ses., on S. J. Res. 91 and H. J. Res. 187 (Washington, Supt. Docs., 1944), p. 79.

unrest and dissatisfaction among the affected employees. Nevertheless, they have been considered necessary to combat inflation, and they have not resulted in charges that "procedures" under various federal and state mediation services were being improperly interfered with. Again the basic question was whether railway labor was to receive the same type of special privileges under wage stabilization that it has already received under adjustment machinery and social insurance.[30] Judge Vinson declared for equal treatment; the President and Congress overruled him.[31]

It should be emphasized, moreover, that Judge Vinson did not initiate the overturning of awards of emergency boards, nor did he devise any new method of settling disputes under the Railway Labor act. The 1941 wage movement set the pattern for the adjustment of railway labor disputes during wartime. The railway unions themselves rejected the award of the Morse emergency board, and because of their economic and political power, they were able to obtain the aid of President Roosevelt in putting pressure on the carriers to grant additional compensation over and above what the Morse board had recommended. Subsequent cases were handled in a like manner, thus providing considerable evidence that the procedures of the Railway Labor act are effective in maintaining labor peace only so long as they provide results satisfactory to the unions.[32] When the contrary occurs, as it so often did during the war, it appears that the awards of emergency boards are simply rejected and the railway unions make use of their political power to achieve their ends.

These wartime developments should not be surprising. The Railway Labor act was conceived by the railway unions and its adoption into law—particularly the 1934 amendments—stands as testimony to their political power. What could be more logical than the further use of political power by these unions to achieve their desired ends whenever the procedures of the act fail to do so?

As a matter of fact, governmental adjustment machinery, such as the Railway Labor act, or protective legislation, such as the Railway

[30] In regard to social insurance, see R. B. Robbins, *Railroad Social Insurance: Favored Treatment Versus Social Insurance,* Nat. Econ. Problems, no. 405 (New York, Am. Enterprise Assoc., 1945).

[31] That is not to imply that special privilege did not go to other groups which were able to muster considerable economic and political pressure. The experience of the United Mine Workers, The Teamsters Union, and the Musicians' Union might also be cited among those who were able to secure favored treatment under stabilization.

[32] That is not to imply that if the railway unions were to demand a 30 per cent increase, they would reject an emergency board recommendation of any less. To those familiar with the bargaining process, however, a recommendation of 18½ per cent may be very satisfactory to a union demanding 30 per cent, whereas a 10 per cent recommendation may be unsatisfactory.

Labor act or the Wagner act, or any form of governmental sponsored arbitration, either voluntary or compulsory, is not only generally the consequence of organized labor's political power, but it insures continued labor activity in the political field. Labor leaders cannot afford many adverse decisions from government tribunals without seriously endangering their positions within the union. They have been selected to produce results. If they fail, their constitutents will replace them with aspirants who promise success where their predecessors have failed. Hence, labor leaders must seek to prevent the appointment of unfriendly or even neutral persons to key administrative posts, and they must keep up an unending pressure on government labor agencies. In short, union leaders must develop political machines capable of decisive action in enough instances so as to command the respect of elected and appointed officials. These facts have been as well known to the conservative leaders of the railway unions for twenty-five years as they have been to the more radical leaders of the CIO Political Action Committee since the formation of that organization. And it is worth noting that in other countries where government supervised collective bargaining prevails, *e.g.*, Australia, New Zealand, and Sweden, labor is in politics on an even greater scale than in the United States.[33]

There are other factors which contribute to peace on the rails besides effective use of political power by the unions when the results of the procedure of the act do not suit them. Government control of railway labor relations is merely a part of the entire policy of regulation, which includes also control of rate setting. Price relief through the Interstate Commerce Commission, such as was granted as part of the 1941 settlement, cannot be ignored by those who would use industrial relations on the railroads as a model for industry generally.

Moreover, the political power of the railway unions is not always used against the railroads. The unions and the carriers have many aspirations in common. For example, the railway unions have used their political power in many states to induce legislatures to put restrictions on the tonnage which trucks may carry. In Congress, the railway

[33] Once labor has decided on a political route to achieve its ends, it must of course remain in politics to preserve its position and to insure friendly administration. The course it takes in politics may vary. *E.g.*, while the CIO-PAC is dedicated to mass political action, the railway unions have favored a policy of judicious "rewarding friends and punishing enemies." Since the railway unions are located in every state and Congressional district, and since their membership has been quite alert in voting in primaries where small, cohesive numbers count, they have achieved a reputation for "producing at the polls" among Congressmen and state legislators. The success of the railway union is attested by the numerous labor and social laws which have been adopted at their behest, as well as by the respect in which such an astute politician as the late President Roosevelt held them.

unions have been important political forces behind the adoption of such legislation as the Transportation act of 1940, the Motor Carrier act of 1935, and the Emergency Railroad Transportation act of 1933, all of which have been at least partially aimed at reducing the competition which other fields of transportation have given the railroads.[34] More recently, these unions have supported the elimination of land grant rates—the especially low rates which the federal government receives on war materials and personnel—and the exemption of the railroads from the provisions of the Sherman Antitrust act. The fact that union and carriers often "hunt" together in legislative halls is conducive to labor peace.[35]

As was noted in the introduction, the period surveyed here is an emergency one and includes only a portion of the history of the Railway Labor act. One must, therefore, be cautious about generalizing the conclusions. Nevertheless, they do have a bearing on such legislative proposals as the Ball-Burton-Hatch bill and President Truman's fact-finding proposal, both of which are modeled on the Railway Labor act.[36]

In adapting the procedures of the Railway Labor act to industry generally, the proponents of these bills do not appear to have given due considerations to the peculiar legal and institutional framework in which the railroad industry operates. The significance of price control and union political influence for peace in the railway industry have apparently been ignored. Moreover, the political method of settling railway labor disputes during the war lends little weight to the belief that facts disseminated to the public through an impartial board would curb industrial strife. Public opinion does not appear to play the decisive rôle which Mr. Truman would assign to it. During the war, when a strike on the rails would have been catastrophic, unions in a superior bargaining position could repeatedly ignore the recommendations of railway emergency boards which were supposed to enlighten and mobilize public opinion. Judging by the railroad experience, if the appointment of such boards becomes a fairly common practice throughout industry, the public may be expected to take less, rather than more, interest in the procedure.

Although some controversies are subject to settlement once the facts

[34] See, *e.g.*, Ralph L. Dewey, "Transportation Act of 1940," *Am. Econ. Rev.*, Vol. XXXI, No. 1 (Mar., 1941), pp. 17-22.

[35] Such political aid from union to industry is not confined to the railway industry. Many unions have, *e.g.*, pressed for tariffs to support an industry.

[36] Reference is to S. 1171 (Ball-Burton-Hatch); and S. 1661 and H.R. 4908 (Truman proposals), all bills of the 78th Cong., 1st sess. Application of these conclusions is, however, also appropriate to many proposed bills which may become law as a result of the recent coal strike. For a more detailed discussion, see the writer's article, "A Critique of Pending Labor Legislation." *Pol. Sci. Quart.*, June, 1946.

are known, it is usually the interpretation of known facts which is at issue, and there are likely to be as many interpretations as there are interests involved. Fact-finders, or emergency board members, are therefore generally forced to give due weight to the bargaining power of the parties if they want their findings accepted. Such "fact-finding" differs widely from that contemplated by Mr. Truman.

There is another very real danger in these fact-finding proposals. Mr. William H. Davis, former chairman of the National War Labor Board, has repeatedly pointed out that unions and employers refused to bargain because they thought that they might obtain more from the War Labor Board than they could by bargaining. The existence of elaborate fact-finding machinery would likewise influence irresponsible elements in both groups to refuse to settle the matters at issue in bargaining in the hope that more might be gained by government intervention. This would aggravate the strike problem.

The proposals based on the procedures of the Railway Labor act do not offer a short-cut to the millennium in industrial relations. Moreover, the experience under the act in wartime is replete with evidence that the millennium has not been attained on the railroads. It is questionable whether there is any substitute for real collective bargaining by responsible men desirous of reaching agreement; and it is certainly doubtful whether responsibility can be inculcated into existence by legislation. The attempt to use the Railway Labor act as the classic example of "model" labor relations legislation disregards the wartime experience and its import.[37]

[37] Additional evidence to support the conclusions reached here have been provided by events occurring since the late fall of 1945, when this was written. Late in 1945, all the railway unions demanded substantial wage increases and rule (working conditions) changes. The non-operating unions, and the Conductors, Switchmen and Firemen, agreed with the carriers to drop their demands for rule changes and to submit their disputes to separate arbitration boards created pursuant to the Railway Labor act. Continuing the 1943 split, however, the Engineers and the Trainmen refused to drop their demands for rule changes. Consequently, their dispute was heard by an emergency board.

Both arbitration boards awarded the employees increases of 16 cents per hour. The emergency board, on the basis of these awards, recommended a like increase, and except for a few very minor ones, remanded the proposed rule changes back to the parties for further negotiation.

The unions were unanimous in condemning the awards and the recommendation. The non-operating groups and the Conductors, Switchmen, and Firemen, having agreed to accept binding arbitration, accepted the awards in a technical sense only, for they immediately put into motion the Railway Labor act's machinery, and ordered strike votes, in order to back up their new demands. The Trainmen and the Engineers rejected the emergency board's recommendation and called a nation-wide strike to commence on May 18, 1946.

After the carriers and the unions had failed to resolve their disputes in new bargaining conferences in Chicago, President Truman called representatives of both sides to the White House and urged the necessity of avoiding a strike. When the impasses continued,

the President took over the railroads. The leaders of the Engineers and Trainmen, however, refused to call off the strike until thirty minutes before it was scheduled to commence. Then they announced a postponement for five days. The late postponement came after trains had been cancelled, express embargoed, and some union members had walked out, so that the nation's transportation system was thrown into a state of confusion. The leaders of the two unions made it clear that they postponed the strike only because President Truman implied that they would receive additional increases of at least 2½ cents per hour.

The President's offer, which all the unions but the Trainmen and the Engineers as well as the carriers, accepted, was in the form of an outright bonus of 2½ cents over the arbitration awards to the eighteen unions which had arbitrated their cases, but was made contingent to the Trainmen and the Engineers on their waiving the seven minor rule changes which the emergency board had recommended. When these two unions refused the compromise, a nation-wide railway strike began on May 23, 1946, and lasted two days. It ended on the President's terms as he appeared before Congress to request passage of a drastic strike-control law.

Meanwhile, the carriers have applied to the Interstate Commerce Commission for permission to increase freight rates an average of 25 per cent, and the annual reports of railway presidents and the journals of railway unions are calling for additional restrictions on other forms of transportation in order to "equalize" their competition with the railroads. And to cap the climax, the United States Senate, during the two-day railway strike, passed a bill to curb strikes which embodies the mediation and fact-finding provisions of the Railway Labor act!

MARX AND ECONOMIC CALCULATION

By M. M. BOBER*

The integrating principle of economics lies in maximizing satisfactions by the use of available scarce resources, in man-hours and the bounties of nature, as well as in savings resulting in capital. The allocation of these resources among the various spheres of enterprise, the combination of varieties of one resource with varieties of another resource, the substitution of one resource for another, and the division of income between consumption and saving, are central in achieving maximum satisfaction with the resources at hand.

Under capitalism the guide to the distribution of resources among the channels of economic activity is price, the price of consumer goods and the price of the resources, labor, land and capital, in a setting of free enterprise and competition. We balance utilities against costs. To use a few simple examples, in competitive equilibrium the fact that price equals minimum average cost implies that the least expenditure of resources is incurred to obtain a utility; the assertion that the inefficient producer drops out of competition means that the producer who uses up more resources than other producers in order to get the same result is eliminated; and when a high cost and high price are associated with small purchases of a given commodity, the idea is that, because a given utility necessitates a large use of resources, it is enjoyed sparingly.

It is doubtful whether Adam Smith, Ricardo and their early followers, from whom Marx learned much of his economics, put this principle at the heart of economic analysis. To Smith the central problem of political economy was efficient production, to Ricardo the exploration of the principles of the distribution of income. The place of utility was not prominent in their minds. Smith goes no farther than to mention that all production is evidently for purposes of consumption;[1] Ricardo goes no farther than to state that if goods are to be produced at all they must be useful. To Marx economics is preëminently a study of class exploitation in a given society in its evolution to the next, higher, social order, and the object of the economics of capitalism specifically is the investigation of the principles governing the exploitation of the proletariat, the fatal maladies of the system, and its dialectic disintegration into socialism and communism. More

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[1] *Wealth of Nations* (Everyman ed.), Vol. II, p. 155.

than any of his predecessors and even contemporaries, however, he was conscious of the problem, in any type of economy, of the distribution of labor and means of production among the various departments of enterprise to satisfy the wants of the community.

Marx teaches that for Robinson Crusoe and in a capitalist economy alike the controlling principle in the allocation of resources rests on labor-value; and that, under capitalism, the instrumentality which gives effect to this principle is competition. "Chance and caprice," he says, "have full play in distributing the producers and their means of production among the various branches of industry. The different spheres of production, it is true, constantly tend to equilibrium: for, on the one hand, while each producer of a commodity is bound to produce a use-value, to satisfy a particular social want, and while the extent of these wants differs quantitatively, still there exists an inner relation which settles their proportions into a regular system; . . . and, on the other hand, the law of the value of commodities ultimately determines how much of its disposable working-time society can expend on each particular class of commodities." This equilibrium, he continues, is constantly upset, but there is "an *a posteriori*, nature imposed necessity controlling the lawless caprice of the producers" by the enduring work of value and competition.[2]

However, the law of labor-value presiding over the pages of *Capital*, Volume I, asserts itself merely as a norm. In the developed stage of capitalism the "price of production" of Volume III dominates the market. The business man seeks a profit on his investment, and capitals of equal magnitudes, whatever their organic composition (*i.e.*, the ratio of capital to wages, in terms of labor-time) will have to bring equal profits. Otherwise the capital that yields a smaller rate of profit because the labor employed, the source of surplus-value, bears a smaller ratio to the capital invested than is the case in another branch of industry will migrate to this other branch, until the rate of profit is equalized in all productive spheres. The migration of capital from sphere to sphere transforms value into price of production.[3] Accordingly we find Marx alluding at times to prices of production as controlling the apportioning of resources, although he hastens to add that labor-value is the matrix of prices.[4] To him, "The exchange, or sale, of commodities at their value is the rational way, the natural law of their equilibrium."[5]

[2] *Capital*, Vol. I (Chicago, Kerr, 1909), pp. 390-91, 88; Vol. III, pp. 213, 226-27, 1026.

[3] *Ibid.*, Vol. III, pp. 186, 206, 212, 230.

[4] *Ibid.*, Vol. III, p. 745.

[5] *Ibid.*, Vol. III, p. 221.

It is worth emphasizing that he had a poor opinion of the way in which price and competition operate in a capitalist society. Although performing, after a fashion, a coördinating function, price and competition are synonymous with anarchy and planlessness, underscoring the antithesis between the order inside the plant and the chaos outside, in the market at large. The quest for profits is to him antagonistic to production for the "satisfaction of social needs." The desire for gain is a perverting influence, and there is "no necessary but only an accidental connection between the volume of society's demand for a certain article and the volume represented by the production of this article."[6] A scheme of production based on the personal calculations and independent decisions of self-seeking individuals for unascertained markets not only breeds maladjustments but has to rely on "blind laws" to impress some order upon "the lawless caprice of the producer," generally through the pressure of competitive self-interest and periodically through crises. Competition stands for anarchy; it is *bellum omnium contra omnes*.[7] Genuine organization in production postulates deliberate collective planning. "The point of bourgeois society," writes Marx, "consists precisely in this, that *a priori* there is no conscious social regulation of production."[8]

In view of his low esteem of calculation under capitalism, his unconcern over monopoly and protection as injurious departures from the optimum distribution of resources is not to be wondered at. To him monopoly profit is merely a redistribution of the loot, surplus-value; what one monopolist seizes another exploiter of labor fails to pocket. Inasmuch as wages are determined by the irreducible customary standard of living of the working population—and this is essentially Smith's, Ricardo's and Mill's theory—if laborers have to purchase monopolized articles their money wages are correspondingly advanced. Only if the wage is above the customary minimum will it fail to rise and the laborers will be hurt by monopoly.[9] In Marx's writings there is no counterpart of Smith's attacks on monopoly. Similarly with free trade. It is desired by manufacturers for the reason that imports cheapen food, so that wages can be lowered and profits raised. Marx favors free trade only because it spreads capitalism

[6] *Ibid.*, Vol. III, pp. 220, 303, 724n.

[7] *Ibid.*, Vol. III, pp. 301, 1026; Vol. II, p. 196; Vol. I, p. 391. That he is familiar with the functioning of price, supply and demand, and competition is clear to any one who reads him. See, *e.g.*, *Capital*, Vol. III, chaps. IX, X, XLI, and Vol. II, pp. 392-93.

[8] *Letters to Dr. Kugelmann* (New York, 1934), p. 74. *Cf.* Engels, *Dialectics of Nature* (New York, 1940), p. 19.

[9] *Capital*, Vol. III, p. 1003.

abroad, intensifies it at home, and, deepening its antagonisms, hastens the revolution.[10]

His reluctance to see in the work of entrepreneurs an organizing aspect of production is emphasized by his treatment of profits. To his mind, profits in the strict sense, that is, the share left after the deduction of interest and rent from surplus-value, stands for robbery, like the rest of surplus-value. There is no specific function in a capitalist economy for which profits can be claimed as a reward.

He is familiar with the function of management inside the factory. The labor process demands the use of hands and head. The two were applied by the same person in the days of the independent craftsman; but capitalist production makes a separation. The workers are treated as automatons, while "the knowledge, the judgment, the will" are concentrated in the capitalist. Whenever production is "social" in character, entailing the coöperation of many workers, a "directing authority," a "commanding will" is needed to articulate the multitude of tasks in a comprehensive scheme of division of labor. Marx likens this function to that of the general of the army or the leader of an orchestra.[11] Too, the employer attends to the purchase of the proper quantity and quality of materials and labor; and he takes care that the work is performed efficiently.[12]

But, Marx contends, these functions can be delegated to a hired manager for modest "wages of superintendence," as is the practice in workers' coöperatives and joint-stock companies. If the capitalist claims the rôle as the guiding genius of production he is doing so because he is the owner of capital and, moreover, under false pretenses, inasmuch as the tasks which he affects to perform are discharged by his managers. "It is not because he is a leader of industry that a man is a capitalist; on the contrary, he is a leader of industry because he is a capitalist. The leadership of industry is an attribute of capital, just as in feudal times the functions of general and judge were attributes of landed property." Wages of superintendence and profits proper are distinct categories.[13]

Aside from the ordinary work of factory management he sees no place for the entrepreneur. He mentions that the costs of running a concern based on a new invention are high and that "the first leaders in a new enterprise are generally bankrupt," and only those who

[10] Speech on *Free Trade,* reprinted as an appendix to *Poverty of Philosophy* (Chicago, 1910).

[11] *Capital,* Vol. I, pp. 557, 396-97, 363; Vol. III, p. 451.

[12] *Ibid.,* Vol. I, pp. 205, 219.

[13] *Ibid.,* Vol. I, pp. 213-15, 364-65; Vol. III, pp. 449-58.

buy them out at bargain prices reap profits. "It is, therefore, generally the most worthless and miserable sort of money-capitalists who draw the greatest benefits out of the universal [*i.e.*, scientific] labor of the human mind."[14] But we do not find him voicing the idea that judgment and risk are involved in the introduction of innovations, and that inventions, though they may represent interesting scientific achievements, may not be economical in view of market situations. On the contrary, inventions are, in his view, merely the gratuitous fruit of "social labor." Discussing the general improvements which reduce the cost of the constant capital of a given employer, he observes: "Such a development of the productive power is traceable in the last instance to the social nature of the labor engaged in production; . . . to the development of intellectual labor, especially of the natural sciences. The capitalist thus appropriates the advantages of the entire system of the division of social labor."[15]

There is likewise no discussion of the business man's uninsurable risks in introducing new commodities, in formulating long-range plans for his place in industry, in contending with shifts in demand and costs, and in facing other varieties of uncertainty in a dynamic world, while his commitments to the hired, borrowed and leased resources are fixed beforehand. The *Communist Manifesto* pays tribute to the enormous achievements of capitalism prior to its maturity, but there is no intimation in his writings that the entrepreneur deserves credit for such achievements, and that risk-taking is a coördinating and dynamic function.

Of a superior character is, to Marx's mind, economic calculation in a communist society. Under capitalism, he teaches, the commodity and production dominate society; under communism production is brought under "common control as a law understood by the social mind," and "socialized man, the associated producers regulate their interchange with nature rationally, bring it under their common control, instead of being ruled by it as by some blind power."[16]

The objectives which the "social mind" will aim to achieve are two: one, the allocation of labor-time to various industries in accordance with social demand; and, two, the distribution of the total income among the producers in accordance with the labor-time expended by them. In both cases value serves as the underlying principle. Says Marx: "Only when production will be under the conscious and prearranged control of society, will society establish a direct relation

[14] *Ibid.*, Vol. III, p. 124.

[15] *Ibid.*, Vol. III, pp. 98, 753-54; Vol. I, p. 422.

[16] *Ibid.*, Vol. III, pp. 301, 307, 954.

between the quantity of social labor-time employed in the production of definite articles and the quantity of the demand of society for them."[17] "In the case of socialized production" producers receive paper-checks entitling them to "a share corresponding to their labor-time."[18]

The independent handicraftsman or peasant, Marx observes, needs no bookkeeping in the management of his affairs, but it is essential in capitalist production "for the control and ideal survey (*Zusammenfassung*) of the process"; bookkeeping is "still more necessary in coöperative (*gemeinschaftlicher*) than in capitalist production."[19] The bookkeeping, he indicates, will run in terms of labor-time, and value, in labor-time, will endure as the governing principle in the allocation of labor among the various employments.[20]

In the absence of the capitalist and his claim to a return on the investment, value as a guide to the allocation of resources does not suffer in a communist society what Marx would call a distortion into "price of production." It is to be noted, however, that in this regard value is even less satisfactory than Marx's "price of production." Among its inadequacies note may be taken of the following. Two articles may embody equal amounts of labor, but one of them may have required the use of more natural resources, which although not the product of labor, are not free goods and must be economized. While of equal value in terms of labor costs these two commodities must be priced differently to prevent the waste of natural resources. Equally, while capital accumulation is going on, *i.e.*, before saving and investment become undesirable in a society, and while inventions take place, the marginal productivity of capital is greater than the marginal productivity of labor. Accordingly commodities with equal costs in labor-time may yet differ in the amounts of instruments used in their production, and must be valued differently.[21]

Marx is not familiar with the marginal analysis although the works of Jevons, Walras and Menger appeared ten years before his death; and without marginal analysis a theory of calculation necessarily suffers unless criteria unknown to traditional economics are contemplated for the new society. He is even unmindful of the intensive cultivation of better than marginal land. In a communist society, he

[17] *Ibid.*, Vol. III, p. 221; *Theorien über den Mehrwert* (Stuttgart, 1905), Vol. II, No. 2, p. 311.

[18] *Capital*, Vol. II, p. 412; *cf.*, Vol. I, p. 90.

[19] *Ibid.*, Vol. II, p. 153.

[20] *Ibid.*, Vol. III, p. 992.

[21] O. Lange, "Marxian Economics in the Soviet Union," *Am. Econ. Rev.*, Vol. XXXV, No. 1 (Mar., 1945), p. 132.

states, instead of allowing the value of wheat to equal the labor cost of the poorest land under cultivation, the value will be the average labor cost of the wheat, per quarter, raised on the land of all the different grades.[22] He does not perceive that it would be more economical to use the better grades of land intensively until the marginal product is the same on all grades. In Marx's solution, a dollar's worth of labor applied to land of lower than average quality will produce less than a dollar's worth of wheat; and labor will be partly wasted in farming while it could be used where it will yield a dollar's worth of product.

Some writers are in the habit of citing passages from Marx in which he designates value as the criterion of calculation in the future society and to conclude that this is his definitive position. But we cannot be sure. Doubt is imported from at least two sources: first, passages that either repudiate this proposition or throw cold water on it, and, second, certain general considerations.

First, as to passages. In *Die Deutsche Ideologie* Marx and Engels write in 1845 that supply and demand exert a dominant influence under capitalism, but under communism "the power of supply and demand dissolves into nothing."[23] In *Anti-Dühring*, embodying mainly Marx's ideas, and the manuscript of which was read to Marx before publication,[24] Engels specifies that in a communist order "society will also not assign values to products."[25] Then comes the curious statement: "The useful effects (*Nutzeffekte*) of the various articles of consumption, compared with each other and with the quantity of labor required for their production, will in the last analysis determine the plan. People will be able to manage everything very simply, without the intervention of the famous 'value.' "[26]

It is likely that, engaged as he is on these pages in hair-splitting differentiations between labor-time embodied in goods, on the one hand, and value as a concept infected with price and exchange connotations, on the other hand, he uses, in the above citation, value in this latter sense, denying the existence of the evil connotations under communism. The paragraph following this citation, however, is far from giving aid and comfort to this suggestion. There Engels reverts to value as labor-time, charges that this concept stands for all the ugly aspects of capitalism, and at the end of the paragraph pronounces

[22] *Capital*, Vol. III, p. 773.

[23] *Marx-Engels, Historisch-kritische Gesamtausgabe* (Berlin, 1927-1932), Part I, Vol. 5, p. 25.

[24] See Engels's statement in *Anti-Dühring* (New York, 1939), Preface, p. 13.

[25] *Ibid.*, p. 337.

[26] *Ibid.*, p. 338.

that it would be absurd "to set up a society in which at last the producers control their products by the logical application of an economic category [value] which is the most comprehensive expression of the subjection of the producers by their own product." In a letter to Kugelmann Marx writes that the allocation of labor in definite proportions "corresponding to the different needs" is a necessity in any system of production, only it changes its form with each particular system; and that under capitalism the form in which the distribution of labor operates is the exchange value of goods. The implication is clear that in the future society the principle of the allocation of labor will assume a different form from exchange value.[27] Finally, we cannot ignore Marx's disapproval, in his appraisal of A. Wagner's *Allgemeine oder theoretische Volkswirtschaftslehre,* of "the presupposition that the theory of value, developed for the explanation of bourgeois society, has validity for the 'socialist state of Marx.' "[28]

Second, there are general considerations casting doubt on Marx's adherence to labor-value as the principle of calculation in a communist society, and outstanding among them are his views on division of labor, and the distribution of income under communism. We are familiar with his attacks on division of labor under capitalism as stultifying human capacities and degrading human dignity.[29] There will be none of it in the new order. In their early days Marx and Engels write that in a communist system the individual will hunt in the morning, fish in the afternoon, rear cattle in the evening, and criticize after dinner, without specializing in any one of these occupations.[30] Toward the end of his years Marx allows Engels, in *Anti-Dühring,* to insist on the same idea. "The old form of division of labor," says Engels, "must be done away with, above all." During the working hours each person will be given the opportunity to develop his physical and mental faculties in all directions. A race of men will be raised who will receive comprehensive training in the scientific basis of production and will be given practical experience in many branches of production from the first step to the last. To institute division of labor in accordance with the natural aptitudes of the worker, and to have "porters" and "architects," is to perpetuate the capitalistic crippling of humanity. After half an hour of architecture the architect will devote his talents to barrow-pushing. "It is a fine sort of socialism

[27] *Letters to Dr. Kugelmann,* letter of July 11, 1868, pp. 73-74.

[28] Quoted by Raya Dunayevskaya, "A New Revision of Marxian Economics," *Am. Econ. Rev.,* Vol. XXXIV, No. 3 (Sept., 1944), p. 535.

[29] See, *e.g., Capital,* Vol. I, pp. 396, 461. *Cf.* Adam Smith, *Wealth of Nations,* Vol. II, p. 264.

[30] *Die Deutsche Ideologie, op. cit.,* p. 22.

which perpetuates the professional porter!"[31] Marx talks in the same vein on "variation of work," but in measured language.[32]

The implications of this antagonism to division of labor for the conception of the optimum employment of resources need no elaboration. The loss of the advantages of division of labor; the expenditure of resources to train each individual in several trades; the huge amount of bookkeeping required for the functioning of such a scheme; and the incompatibility of the one criterion, production and utility, with the other criterion, the development of the physical and intellectual capacities of the worker—these are some of the considerations that come to mind. The fact that Marx is unimpressed by such considerations argues that labor-value is not what he has in mind as the guide to the productive organization under communism.

Of the same order is his principle of the distribution of income. In his critique of the Gotha program he makes a distinction between two stages of communism. In the early stage, commonly designated as socialism and still marked by the imperfections of capitalism, a worker is rewarded in proportion to his contribution. He receives a voucher to draw on the social storehouse a quantum commensurate, in terms of hours, with the labor he had rendered. But this conception of right does not appeal to Marx. It is indeed superior to the bourgeois idea of right inasmuch as it excludes surplus-value and exploitation; but it is still burdened with capitalistic postulates. People are unequal physically and mentally. Some can work longer and more intensively; and receive greater remuneration although their wants may be smaller; while others, married or with larger families, have needs exceeding the compensation which they draw for their work. This standard of "equal rights" becomes a standard of "unequal rights for unequal work," Marx declares.[33]

Accordingly, "In a higher phase of communist society, after the tyrannical subordination of individuals in the division of labor and thereby also the distinction between manual and intellectual work, have disappeared, . . . after the productive forces have also increased and all the springs of social wealth are flowing more freely, along with the all-round development of the individual, then and then only can the narrow bourgeois horizon of rights be left far behind and

[31] *Anti-Dühring*, pp. 320-24, 221-22.

[32] *Capital*, Vol. I, pp. 533-34.

[33] *Critique of the Gotha Programme*, pp. 29-30. Already in *Die Deutsche Ideologie* Marx and Engels declare that it is one of the principles of communism to insist that differences in brains do not constitute differences of stomach and physical needs, and that a difference in occupation "gives no basis for inequality, for *privilege* in possession and enjoyment." *Op. cit.*, p. 526. Italics not mine.

society will inscribe on its banner: " 'From each according to his capacity, to each according to his need.' "[34] This principle of distribution would present no difficulties only if all conceivable goods were produced in such abundance as to stand ready to satisfy every "need" fancied by any one; or if "needs" refer to a minimum of basic requirements supplied in enormous volume. Marx's allusion to "increased" productive forces and wealth flowing "more freely" hardly suggests such a profusion of goods.

That he is apt to associate needs for individual development with production short of superabundant is seen in a paragraph in *Capital,* Volume III. He assumes a communal society barely emerging from capitalism, in which wages come out of the producer's product and consumption is freed from capitalist "limitations" in that it is "extended" to the volume "permitted, on the one hand, by existing productivity of society . . . and, on the other hand, required by the full development of his individuality."[35] The "full development" of the individual is a big order: it postulates production of munificent dimensions, and yet the context suggests no such happy state.

In general, such a theory of wages or distribution, so long as goods are not free, takes us far away from the idea of coördinating economic activity as commonly discussed in economics. If wages are not brought in accord (in the Marxian scheme) with value and are allowed to fluctuate for a given worker with marriage and divorce, with births and deaths in his family, and with the imponderable needs of his personal development, the manager of a communist plant—when he is not fishing or criticizing—is hardly left with a meaningful guide for the substitution of one factor for another in seeking the best combination of resources, or for the optimum scale of production. Cost of production, as a measure of disutility or as a determinant of price, loses meaning; so does the equilibrium of supply and demand.

Where are we? If Marx had indicated in all the passages dealing with the allocation of resources which stage of the future society he had in mind, the socialist or the communist stage, the path to a conclusion would be easier. Instead, with the lone exception of his observations on the Gotha program, he refers in such passages to a communal society generally, without specifying the stage of its development; and we confront a maze of contradictory pronouncements.

We must rely therefore on general considerations to guide us. We know that he harbors an acute dislike of vestiges of capitalism in

[34] *Critique of the Gotha Programme,* p. 31. The translation has been slightly revised: see the translation in the Appendix of this same work, p. 109.

[35] *Capital,* Vol. III, p. 1021.

the new order, especially where principles of human relations are concerned; that despite his competent knowledge of the equilibrating effects of price he is not well disposed to the functioning of supply and demand and the decisions of the market, stressing instead the superiority of social planning; and that he is a firm advocate of the relativity of distribution, and what we should call justice, to the prevailing base of productive organization. On this basis one may venture the following interpretation of Marx's position. For a period of time after the fall of capitalism, value will endure as a criterion of the distribution of resources, but as soon as possible, even before the arrival of the higher stage of communism, other criteria, not defined by him, should be elaborated. As for present Soviet Russia, it may be remarked parenthetically that, in view of the fact that her revolution came long before capitalism and its productive forces ran their full course, Marx would probably hold that the reign of value and correlative principles may prevail longer than in a society which abandoned capitalism after its maturest development.

Integral to the problem of the ideal allocation of resources is the question of interest. Nowhere in Marx's writings is there mention that interest can be a guide in the use of resources for making consumption goods or capital goods, or in balancing present and future enjoyments. With reference to timber growing in a communist society, he says that the question is "simply how much land the community can spare . . . for forestry."[36] Under capitalism, he observes, the upsurge of economic activity associated with railway building may be accompanied by a crash when activity subsides with the completion of the project. This disturbance cannot occur in a communistic régime, where it is "simply" a matter of calculating how much labor, means of production, and subsistence society "can utilize without injury" for undertakings demanding a long period of construction.[37] In a communist economy annual deductions will be made from the total product for the expansion of industry, but the guide to the magnitudes of resources assigned for this additional capital is vaguely referred to as "social need." In one place he mentions that the deduction for this purpose as well as for replacement and insurance against natural mishaps "can be determined by existing means and forces and partly through the calculation of probabilities."[38] What he means by "existing means and forces" is obscure. That he does not imply interest is evident from the fact that he denies its very existence in a communist economy.

[36] *Ibid.*, Vol. II, p. 278.

[37] *Ibid.*, p. 361.

[38] *Critique of the Gotha Programme*, p. 27.

Marx sees no valid reason for interest as a category in distribution under capitalism or communism. Senior is ridiculed for perceiving abstinence in capital; and Adam Müller is dismissed sarcastically for suggesting that interest is payment for time.[39] To term interest the price of capital is to use "an irrational expression," because capital, even in the form of goods, represents a "sum of values" measured by price; and the phrase "price of capital" accordingly refers to price apart from the price embodied in the capital—"an absurd contradiction."[40] Far from functioning as a unique factor of production, as in orthodox economics, capital is to Marx the broad symbol of a comprehensive social phenomenon in a definite historical period. It symbolizes "command over the labor of others"; it is a certificate sanctioning the levy of tribute. Capital does not represent savings, it stands for robbery. If the workers were in possession of all the means of production, the concept of capital would disappear together with the phenomenon of interest, profit and rent.[41]

Interest owes its existence to the fact that there are borrowers and lenders of funds; that is, under capitalism, the industrial capitalists and the money capitalists are not the same individuals. The use of money helps to generalize the rate of interest; but even in the absence of money interest would endure. Only, "If there were no money at all, there would certainly be no general rate of interest."[42] He emphasizes, too, that "If all capital were in the hands of the individual

[39] *Capital,* Vol. I, p. 654; Vol. III, p. 420.

[40] *Ibid.,* Vol. III, p. 417. However, he himself uses the expression; see *ibid.,* pp. 430-31, 433.

[41] *Ibid.,* pp. 418-19, 207, 597. It is easy to get the impression that Marx is dealing only with the money-rate, in the short-term money market. However, while in certain chapters Marx deals exclusively with this rate of interest, he also has in mind the long-run rate in his discussion as a whole. In fact, his treatment embraces all kinds of borrowing and lending. In chapter 21, where he develops the essentials of his theory of interest, and in chapter 24 he gives emphasis to the idea of money lending as cloaking the underlying aggregate of capital goods which epitomizes the social relations of exploitation, providing the surplus-value out of which interest is paid. In chapter 23 he stresses the distinction between capital goods as functioning and exploiting in the reproduction process and the loanable money as mere ownership. Too, there are corroborating brief statements throughout the discussion. For instance, his reference to the retired wealthy people living on interest and commanding part of the supply of loanable money obviously refers to long-term lending (pp. 425, 599). To calculate the average rate of interest, it is necessary to compound the rate which fluctuates through the business cycle and "the rate of interest in such investments as require loans of capital for a long time" (p. 426). The supply of loan-capital would be identical, he says, with the supply of the "elements of production for the industrial capitalist" if, instead of possessing money, "the lending capitalists were in possession of machinery, raw materials, etc." which they would lend to the industrial capitalists (pp. 609-10). For his ideas on interest before capitalism, see chapter 36. All the references in this note are to the third volume of *Capital.*

[42] *Ibid.,* pp. 495, 605.

capitalists, there would be no interest and no rate of interest," inasmuch as borrowing would cease.[43] Surplus-value arises from the private ownership of the means of production, interest from the ownership of loanable funds. The employer exacts a tribute for the use of the former, the money lender for the use of the latter. In both instances the claim is based on ownership, but Marx sees a difference in the implications.[44] Were interest to vanish, surplus-value would not diminish and profits (in the strict sense) would rise correspondingly. Preëminently a property attribute, interest will be extinct under communism alike as an entity and as a habit of thought.

It is not surprising, therefore, to learn that in Marx's organon there is no determinant of the rate of interest and no "natural" rate of interest. Interest occupies a position at variance with that of price, wages, profits or rent. These latter are governed by laws which set long-run limits to their magnitudes. The fluctuations of the supply of and the demand for commodities regulate the deviations of their price from the norm. When supply and demand are in equilibrium, "they cease to explain anything," Marx asserts; and it is then that the underlying determinant of value comes to expression—the immanent criterion of socially necessary labor or "the price of production" of the revised version. The same with wages. The oscillations of the market price of labor-power play around the gravitational focus, the value of labor-power as embodied in the goods constituting the customary standard of living. Further, in the apportionment of wages and profits (in the full sense of surplus-value) there is the inherent principle, according to Marx, of arriving at unpaid labor by deducting from the value of, say, the day's product the value of labor-power for the day. Similarly the dimensions of rent are validated by distinctive considerations governing its nature.[45]

Not so with interest. When the supply of loanable money,[46] offered by banks, temporarily unemployed funds of business men, or private savings, is in balance with the demand for short-term means of payment or purchase,[47] or for long-run investments, there is no determinant of the rate of interest innate in the necessities of the process of production. At times it can be high enough to absorb all profit, and it may fall "to any depth." It "becomes a matter of arbitrary and lawless estimation"; "its determination is a matter of accident, purely em-

[43] *Ibid.*, pp. 443, 445, 435.

[44] *Ibid.*, pp. 437-48.

[45] *Ibid.*, pp. 223, 419, 428, 431, 439, 741.

[46] *Ibid.*, pp. 589, 594-96.

[47] *Ibid.*, pp. 601-05.

pirical." In what proportions the lending and investing capitalists divide the surplus-value (aside from rent) is governed by the arbitrary opinion of borrower and lender, but principally "directly and indirectly . . . by the proportion between supply and demand," with the sanction of "custom and legal tradition" as a self-asserting background, and with the average rate of pure profit as a prominent influence.[48]

[48] *Ibid.*, pp. 419-23, 426-32, 601.

THE ECONOMICS OF MINIMUM WAGE LEGISLATION

By George J. Stigler*

The minimum wage provisions of the Fair Labor Standards act of 1938 have been repealed by inflation. Many voices are now taking up the cry for a higher minimum, say, of 60 to 75 cents per hour.

Economists have not been very outspoken on this type of legislation. It is my fundamental thesis that they can and should be outspoken, and singularly agreed. The popular objective of minimum wage legislation—the elimination of extreme poverty—is not seriously debatable. The important questions are rather (1) Does such legislation diminish poverty? (2) Are there efficient alternatives? The answers are, if I am not mistaken, unusually definite for questions of economic policy. If this is so, these answers should be given.

Some readers will probably know my answers already ("no" and "yes," respectively); it is distressing how often one can guess the answer given to an economic question merely by knowing who asks it. But my personal answers are unimportant; the arguments on which they rest, which are important, will be presented under four heads:

1. Effects of a legal minimum wage on the allocation of resources.
2. Effects on aggregate employment.
3. Effects on family income.
4. Alternative policies to combat poverty.

1. *The Allocation of Resources*

The effects of minimum wages may in principle differ between industries in which employers do and do not have control over the wage rates they pay for labor of given skill and application. The two possibilities will be discussed in turn.

Competitive Wage Determination

Each worker receives the value of his marginal product under competition. If a minimum wage is effective, it must therefore have one of two effects: first, workers whose services are worth less than the minimum wage are discharged (and thus forced into unregulated fields of employment, or into unemployment or retirement from the labor force); or, second, the productivity of low-efficiency workers is increased.

The former result, discharge of less efficient workers, will be larger the more the value of their services falls short of the legal minimum, the more elastic the demand for the product, and the greater the possibility of substituting other productive services (including efficient labor) for the inefficient workers' services. The discharged workers will, at best, move to unregulated

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jobs where they will secure lower returns. Unless inefficient workers' productivity rises, therefore, the minimum wage reduces aggregate output, perhaps raises the earnings of those previously a trifle below the minimum, and reduces the earnings of those substantially below the minimum. These are undoubtedly the main allocational effects of a minimum wage in a competitive industry.

The second and offsetting result, the increase of labor productivity, might come about in one of two ways: the laborers may work harder; or the entrepreneurs may use different production techniques. The threat of unemployment may force the inefficient laborers to work harder (the inducement of higher earnings had previously been available, and failed), but this is not very probable. These workers were already driven by the sharp spurs of poverty, and for many the intensity of effort must be increased beyond hope (up to 50 or more per cent) to avoid discharge.

The introduction of new techniques by the entrepreneurs is the more common source of increased labor productivity. Here again there are two possibilities.

First, techniques which were previously unprofitable are now rendered profitable by the increased cost of labor. Costs of production rise because of the minimum wage, but they rise by less than they would if other resources could not be substituted for the labor. Employment will fall for two reasons: output falls; and a given output is secured with less labor. Commonly the new techniques require different (and hence superior) labor, so many inefficient workers are discharged. This process is only a spelling-out of the main competitive effect.

Second, entrepreneurs may be shocked out of lethargy to adopt techniques which were previously profitable or to discover new techniques. This "shock" theory is at present lacking in empirical evidence but not in popularity.

There are several reasons for believing that the "shock" theory is particularly inappropriate to the industries paying low wages. All of the large manufacturing industry categories which in 1939 paid relatively low wages (measured by the payroll of wage-earners divided by their average number) are listed in Table I. A study of this table suggests two generalizations: (1) the low-wage industries are competitive, and (2) the ratio of wages to total-processing-cost-plus-profit is higher than in high-wage industries. The competitive nature of these industries argues that the entrepreneurs are not easy-going traditionalists: vigorous competition in national markets does not attract or tolerate such men. The relatively high labor costs reveal that inducements to wage-economy are already strong. These considerations both work strongly against the shock theory in low-wage manufacturing industries in 1939.[1] Since these industries were on the whole much less affected by the

[1] The current extensive and confident uses made of labor productivity indexes seem to me inappropiate to their ambiguity and inaccuracy. For those who are less skeptical, I may add that for the period 1929 to 1937, output per worker can be approximated for 9 of the industries in Table I (using data from S. Fabricant's *Employment in Manufacturing*, 1899-1939 [New York, Nat. Bur. of Econ. Research, 1942]). In 6 of the 9 industries the increase in labor productivity equalled or exceeded that of all manufacturing.

war than other manufacturing industries, they will probably be present in the post-war list of low-wage industries. The low-wage industries in trade and services display the same characteristics and support the same adverse conclusion with respect to the shock theory.[2]

TABLE I.—EMPLOYMENT, AVERAGE ANNUAL EARNINGS OF FULL-TIME WAGE-EARNERS, AND PERCENTAGE WAGES FORM OF VALUE-ADDED, IN LOW-WAGE MANUFACTURING INDUSTRIES, 1939

Industry	Employment	Average Earnings	Wages as Percent of Value Added
Men's and boys' furnishings	166,945	$632	52.2
Canned and preserved foods	134,471	660	28.0
Cigars	50,897	673	42.0
Cotton manufactures	409,317	715	51.1
Fertilizer	18,744	730	24.0
Wood containers	45,070	735	47.2
Women's accessories	58,952	740	41.3
Misc. fabricated textiles	49,242	746	36.2
Misc. apparel	38,288	769	45.5
Rayon and silk manufactures	119,821	779	54.4
Animal and vegetable oils	21,678	781	25.1
Costume jewelry, etc.	25,256	782	43.5
Sawmills, etc.	265,185	810	52.0
Leather products	280,411	847	50.9
All Manufacturing		1,153	36.8

Source: *Census of Manufactures, 1939.*

Employer Wage Determination

If an employer has a significant degree of control over the wage rate he pays for a given quality of labor, a skillfully-set minimum wage may increase his employment and wage rate and, because the wage is brought closer to the value of the marginal product, at the same time increase aggregate output. The effect may be elucidated with the hypothetical data in Table II. If the entrepreneur is left alone, he will set a wage of $20 and employ 50 men; a minimum wage of $24 will increase employment to 70 men.

This arithmetic is quite valid, but it is not very relevant to the question of a national minimum wage. The minimum wage which achieves these desirable ends has several requisites:

1. It must be chosen correctly: too high a wage (over $28 in our example) will decrease employment. The accounting records describe, very imperfectly, existing employment and wages; the optimum minimum wage can be set only if the demand and supply schedules are known over a considerable range. At present there is no tolerably accurate method

[2] We should perhaps also notice that, even if the shock theory were of general applicability, the maintenance or increase of employment would require also (1) that demand be elastic, and (2) low-efficiency workers continue to be used with the improved techniques.

of deriving these schedules, and one is entitled to doubt that a legislative mandate is all that is necessary to bring forth such a method.
2. The optimum wage varies with occupation (and, within an occupation, with the quality of worker).
3. The optimum wage varies among firms (and plants).
4. The optimum wage varies, often rapidly, through time.

TABLE II.—HYPOTHETICAL DATA ILLUSTRATING EMPLOYER WAGE DETERMINATION

Number of Workers	Wage Rate	Marginal Cost of a Worker	Value of the Marginal Product[a]
10	$12		$36
20	14	$16	34
30	16	20	32
40	18	24	30
50	20	28	28
60	22	32	26
70	24	36	24

[a] Or marginal value product, if this is less.

A uniform national minimum wage, infrequently changed, is wholly unsuited to these diversities of conditions.[3]

We may sum up: the legal minimum wage will reduce aggregate output, and it will decrease the earnings of workers who had previously been receiving materially less than the minimum.

2. *Aggregate Employment*

Although no precise estimate of the effects of a minimum wage upon aggregate employment is possible, we may nevertheless form some notion of the direction of these effects. The higher the minimum wage, the greater will be the number of covered workers who are discharged. The current proposals would probably affect a twentieth to a tenth of all covered workers, so possibly several hundred thousand workers would be discharged. Whatever the number (which no one knows), the direct unemployment is substantial and certain; and it fairly establishes the presumption that the net effects of the minimum wage on aggregate employment are adverse.

This presumption is strengthened by the existing state of aggregate money demand. There is no prospective inadequacy of money demand in the next year or two—indeed, the danger is that it is excessive. If the minimum wage were to increase the relative share of wage-earners and, hence, the propensity to consume—which requires the uncertain assumption that the demand for inefficient labor is inelastic—the increment of consumer demand will be

[3] One can go much farther: even administratively established minima, varying with firm and time, would be impossibly difficult to devise and revise, and their effects on private investment would be extremely adverse.

unnecessary, and perhaps unwelcome.[4] (Conversely, the direct unemployment resulting from the wage law would diminish faster in a period of high employment.)

It is sufficient for the present argument that no large increase in employment will be induced by the legislation. Actually, there is a presumption that a minimum wage will have adverse effects upon aggregate employment.

3. *Wage Rates and Family Income*

The manipulation of individual prices is neither an efficient nor an equitable device for changing the distribution of personal income. This is a well-known dictum that has received much documentation in analyses of our agricultural programs. The relevance of the dictum to minimum wage legislation is easily demonstrated.

One cannot expect a close relationship between the level of hourly wage rates and the amount of family income. Yet family income and needs are the fundamental factors in the problem of poverty. The major sources of discrepancy may be catalogued.

First, the hourly rates are effective only for those who receive them, and it was shown in Section 1 that the least productive workers are forced into uncovered occupations or into unemployment.

Second, hourly earnings and annual earnings are not closely related. The seasonality of the industry, the extent of overtime, the amount of absenteeism, and the shift of workers among industries, are obvious examples of factors which reduce the correlation between hourly earnings and annual earnings.

Third, family earnings are the sum of earnings of all workers in the family, and the dispersion of number of workers is considerable. The

TABLE III.—PERCENTAGE DISTRIBUTION OF WAGE-EARNER FAMILIES BY NUMBER OF EARNERS: MINNESOTA, 1939

Family Income	One Earner	Two Earners	Three Earners	Four or more Earners
\$250–\$500	94.5	4.6	.7	.2
500– 750	92.4	7.1	.3	.2
750–1000	86.7	10.7	1.5	1.1
1000–1250	88.5	10.4	1.1	.1

Source: *Minnesota Incomes, 1938–39*, Vol. II (St. Paul, Minnesota Resources Commission, 1942), p. 152.

summary in Table III for low income wage-earner families in Minnesota in 1939, shows that in the \$250-\$500 income class one-twentieth of the families had more than one earner and in the higher income classes the fraction rose to one-eighth.

[4] This line of argument implies that a minimum wage is more likely to have beneficial effects in depression (if the demand for the relevant labor is inelastic), but it does not imply that the beneficial effects are likely.

Fourth, although wages are, of course, the chief component of the income of low-wage families, they are by no means the only component. It is indicated in Table IV that a tenth of the wage-earner families had cash investment income, a quarter had entrepreneural income, and a quarter owned their homes.

TABLE IV.—COMPOSITION OF INCOME OF WAGE-EARNER FAMILIES: MINNESOTA, 1939

Income Class	Total	Wages and Salaries	Income		Investment Income	
			Entre-preneural Income	Room and Board	Cash	Total
1. *Percentage of Families Receiving Income*						
$250–$500		99.9	26.5	1.3	12.3	28.2
500– 750		100.0	25.2	1.7	10.1	24.2
750–1000		100.0	21.4	2.7	9.4	31.2
1000–1250		100.0	18.4	3.0	10.4	22.8
2. *Average Amount*						
250– 500	$ 387	$ 308		−$ 9	$64	
500– 750	631	560		62	82	
750–1000	865	766		53	82	
1000–1250	1124	1032		91	96	

Source: *Minnesota Incomes, 1938–39*, Vol. I (St. Paul, Minnesota Resources Commission, 1942), p. 42; Vol. II, p. 200.

All of these steps lead us only to family income; the leap must still be made to family needs. It is argued in the next section that family composition is the best criterion of need, and whether this be accepted or not, it is clearly an important criterion. The great variation in family size among wage-earner families is strongly emphasized by the illustrative data in Table V; an income adequate for one size is either too large or too small for at least half the families in that income class.

The connection between hourly wages and the standard of living of the family is thus remote and fuzzy. Unless the minimum wage varies with the amount of employment, number of earners, non-wage income, family size, and many other factors, it will be an inept device for combatting poverty even for those who succeed in retaining employment. And if the minimum wages varies with all of these factors, it will be an insane device.

4. *The Problem of Poverty*

Minimum wage legislation commonly has two stated objectives: the reduction of employer control of wages; and the abolition of poverty. The former and much lesser purpose may better be achieved by removing the condition of labor immobility which gives rise to employer control. Labor immobility would be reduced substantially by public provision of comprehensive information on employment conditions in various areas and industries. The immobility would be further reduced by supplying vocational training and

loans to cover moving costs. But employer wage control is not the important problem; let us turn to the elimination of poverty.

Incomes of the poor cannot be increased without impairing incentives. Skillful policies will, for a given increase in the incomes of the poor, impair incentives less than clumsy policies. But the more completely poverty is eliminated, given the level of intelligence with which this is done, the greater will be the impairment of incentives. This is a price we must pay, just as impairment of incentives is a price we have willingly paid to reduce the inequality of income by progressive income and estate taxes. Society must determine, through its legislators, what minimum income (or addition to income) should be guaranteed to each family. We shall assume that this difficult decision has been made.

TABLE V.—PERCENTAGE DISTRIBUTION OF WAGE-EARNER FAMILIES BY NUMBER OF PERSONS: CHICAGO AND ATLANTA, 1936

Income Class	Number of Persons in Family			
	2	3 or 4	5 or 6	7 or more
1. *Chicago*				
$ 0–$250	39.6	43.6	14.9	2.0
250– 500	35.3	45.8	17.6	1.3
500– 750	31.8	53.7	13.0	1.6
750–1000	29.0	56.5	12.4	2.1
2. *Atlanta*				
0– 250	30.	55.	15.	0.
250– 500	20.1	48.1	16.5	5.3
500– 750	22.6	46.9	24.4	6.2
750–1000	21.6	48.1	23.5	6.7

Sources: *Family Income in Chicago, 1935–36* (Bur. of Lab. Stat. bull. no. 642 [Washington, Supt. Docs., 194]),Vol. I, p. 117; *Family Income in the Southeastern Region* (Bur. of Lab. Stat., bull. no. 647 [Washington, Supt. Docs., 194]), Vol. I, p. 148.

One principle is fundamental in the amelioration of poverty: those who are equally in need should be helped equally. If this principle is to be achieved, there must be an objective criterion of need; equality can never be achieved when many cases are judged (by many people) "on their merits." We are driven almost inexorably to family size and composition as this criterion of need. It is obviously imperfect; the sickly require more medical care than the healthy.[5] But it is vastly easier to accord special treatment to certain families for a few items like medical care than to accord special treatment to every family for the sum of all items of expenditure.

It is a corollary of this position that assistance should not be based upon occupation. The poor farmer, the poor shopkeeper, and the poor miner are

[5] One could argue that rural families should receive less help, to offset the lower prices at which food and housing are procured. The group is of sufficient size and perhaps sufficiently identifiable to justify separate treatment. But there are grounds other than political expediency for rejecting this proposal.

on an equal footing. There may be administrative justification (although I doubt it) for treating the farmer separately from the urban dweller, but there is no defense in equity for helping the one and neglecting the other. To render the assistance by manipulating prices is in any case objectionable: we help the rich farmer more than the poor, and give widely differing amounts of help to the poor farmer from year to year.

The principle of equity thus involves the granting of assistance to the poor with regard to their need (measured by family composition) but without regard to their occupation. There is a possible choice between grants in kind and in money. The latter commends itself strongly: it gives full play to the enormous variety of tastes and it is administratively much simpler. Yet it raises a problem which will be noticed shortly.

Even if these general observations be accepted, the structure of administration is of grave importance, and I do not pretend to have explored this field. There is great attractiveness in the proposal that we extend the personal income tax to the lowest income brackets with negative rates in these brackets. Such a scheme could achieve equality of treatment with what appears to be a (large) minimum of administrative machinery. If the negative rates are appropriately graduated, we may still retain some measure of incentive for a family to increase its income. We should no doubt encounter many perplexing difficulties in carrying out this plan, but they are problems which could not be avoided, even though they might be ignored, by a less direct attack on poverty.

One final point: We seek to abolish poverty in good part because it leads to undernourishment. In this connection, dietary appraisals show that in any income class, no matter how low, a portion of the families secure adequate diets, and in any income class, as high as the studies go, a portion do not. The proportion of ill-fed, to be sure, declines substantially as income rises, but it does not disappear. We cannot possibly afford to abolish malnutrition, or mal-housing, or mal-education, only by increasing incomes.

Either of two inferences may be drawn. The program of increasing income must be supplemented by a program of education—in diet, in housing, in education! Or the assistance to the poor should be given in kind, expertly chosen. The latter approach is administratively very complex, but quicker and in direct expenditure vastly more economical. These factors affect our choice, but a thought should be given also to the two societies to which they lead.

WAGE DIFFERENCES IN LOCAL LABOR MARKETS

By Lloyd G. Reynolds*

The perfect labor market usually assumed in discussions of wages tends toward an equilibrium position in which workers of equal ability working equally hard at identical jobs under uniform conditions would receive equal wage rates. While actual labor markets are obviously far from perfect, one is still inclined to believe that some such tendency toward wage equalization is operative.

It is always somewhat disturbing, therefore, to observe the great variety of rates for apparently comparable jobs which prevails in actual labor markets. The National War Labor Board has during the past several years collected the rates paid by different firms for certain "key occupations" in a large number of industrial areas. Inspection of these data indicates that the highest rate in an area is usually at least 50 per cent and frequently 100 per cent above the lowest rate for workers classified under the same job title.

These differences in rates are of course not necessarily significant for wage theory. Their significance could be determined only by correcting for all the conditions assumed equal in the theoretical problem. First, the workers whose earnings are being compared may not be of equal ability or may not be working equally hard. This could readily account for differences in piece-rate earnings, and even under time rates, inter-firm wage differences might be offset by differences in the level of ability or effort required by various firms. Second, jobs called by the same name may not be the same jobs and the workers doing them may not be interchangeable. Terms such as "machinist," "welder," and even "common laborer" are notoriously unreliable indicators of job content.

Third, even if one could find two jobs requiring performance of exactly the same operations, these jobs might differ in almost numberless other respects. Among these are the extent of "fringe" wage payments—bonuses, paid vacations, paid holidays, pension systems, free medical care, etc.—the shift involved and the shift differential if any, the expected regularity of work, the length of the work day and week, the extent to which the worker is protected against layoffs by seniority or other rules, the opportunity for advancement, physical conditions of work, the congeniality of fellow-workers and supervisors, the quality of personnel management in the company, and the presence or absence of a union. Competition in a perfect labor market is supposed to equalize, not money rates of wages, but the total attractiveness of the same job in different plants. The conclusions of theory could be tested, therefore, only if it were possible to measure the total attractiveness of a

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job by reducing each of the factors enumerated above to a cents-per-hour equivalent and totaling.[1] Comparison of the totals would indicate the presence or absence of what may be termed "true" wage differences, to distinguish them from mere differences in base rates of pay.

Since no study of this sort has ever been made, it is not possible to assert categorically that "true" wage differences exist, still less that they are as large as the apparent differences in base rates.[2] Moreover, in order to be theoretically interesting, wage differences must have persisted sufficiently long for workers to learn about them and have reasonable opportunity to move to the more desirable jobs. This means that measurements must probably be extended over a period of at least a decade.[3]

The writer is of the opinion that "true" wage differences are of significant size in actual labor markets, and that they do not diminish appreciably with the passage of time. Whether this is so, however, can be discovered only by further research. The object here is simply to develop hypotheses capable of explaining the appearance and persistence of wage differences and capable, therefore, of serving as guides to investigation.

I

It is necessary first to distinguish between conditions which might make different firms willing to pay different wage rates, and conditions which would permit the continued payment of different rates. In other words, one must distinguish between *positive* factors operating on the demand side of the market and *permissive* factors operating on the supply side.

It is not difficult to construct conditions of labor supply which would permit the persistence of wage differences. If full employment is assumed, a forward-rising supply-curve of labor may be posited on any of several

[1] A worker makes an implicit calculation of total job attractiveness every time he decides to change or not to change his job. And workers might be able to provide an investigator with rough quantitative estimates of the importance they attach to various job characteristics: 10 years' seniority = 7 cents per hour, pleasant supervisor = 4 cents per hour, and so on. The main analytical difficulty is that some job attributes, notably things like security, would probably be valued very differently by different workers. It would not be legitimate to average out different workers' ratings of the same job to arrive at a score for it; for the fact that different workers react differently toward the same constellation of job characteristics is the important thing.

[2] Charles A. Myers and W. Rupert Maclaurin, after careful observation of a New England industrial community for several years, expressed the opinion that differences in wage rates in this area were not accompanied by offsetting differences in other job characteristics: "The low-wage firms generally did not compensate for their poorer rates by providing better working conditions, welfare plans, or good 'informal relations.'" (*The Movement of Factory Workers* [New York, Wiley, 1944], p. 73.)

[3] Strictly speaking, even a demonstration that substantial wage differences had persisted unchanged for ten, twenty, or more years would not refute the possibility that a tendency toward wage equalization had been operative *at each moment of time* within that period. The market might at each moment of time be tending toward an equilibrium position of equal wage rates; yet because of the continual intervention of dynamic changes, involving changes also in the appropriate equilibrium position, the observed wage differences might not decrease and might even increase.

grounds,[4] of which the most realistic are probably (a) differences in workers' preference for specified combinations of wages and conditions, analogous to differences in consumer preference; (b) attachment of workers to a familiar workplace and work-group; (c) attachment of workers to a familiar place of residence. These last two factors may be considered as operating independently of the intrinsic attractiveness of the job, and would produce a forward-rising supply curve even if all jobs in the market were equally attractive. If all firms in the market have sloped supply curves, there is obviously no reason why different wage rates should not continue indefinitely.

A different and in some ways more interesting model may be constructed under conditions of unemployment. Suppose that layoffs have been made in such a way that a considerable proportion of the unemployed are more efficient than the least efficient of the employed. Suppose further that any firm which wishes to expand its work force will hire unemployed workers rather than workers already employed by other firms. Suppose finally that the alternative to employment is relief at a level below the workers' conception of a tolerable wage.

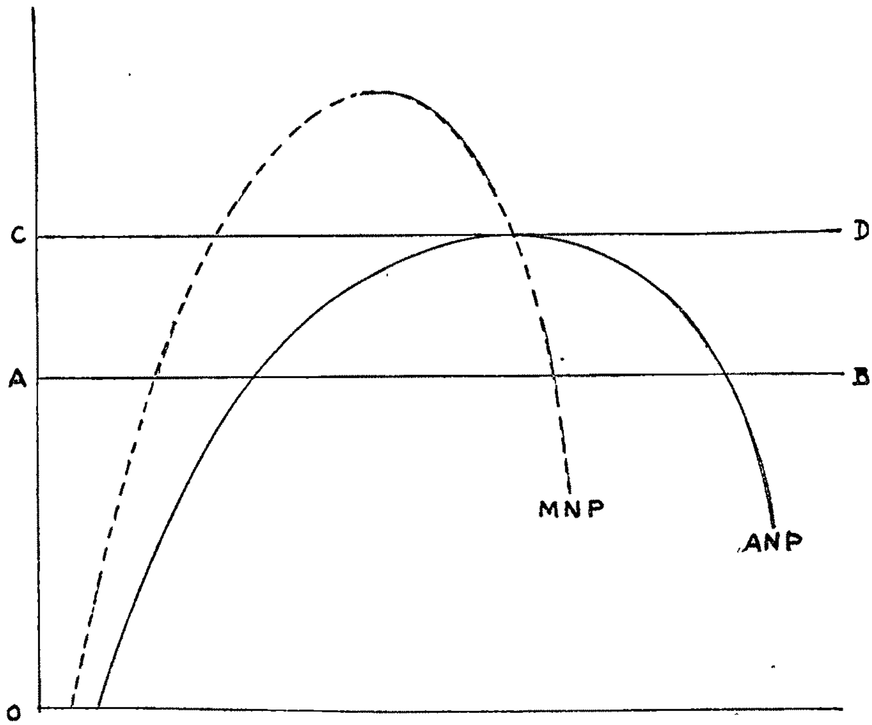
Under these conditions the supply curve of labor to each firm would look somewhat as follows: starting from a point representing the firm's present wage rate and employment, the curve would run horizontally to the right for at least a considerable distance and possibly all the way to the point of full employment. Viewed from the other direction, it would run vertically downward to a level which would provoke the workers to quit work in a body, and would then become horizontal. This level will be referred to hereafter as the "minimum wage" of the firm. In this sort of labor market each firm would clearly have wide latitude in choosing a wage rate and wage differences, once established, could persist indefinitely.

While these supply conditions will *permit* wage differences to exist, the conditions which will actually *produce* wage differences must be sought on the demand side of the labor market. The remainder of the paper will be devoted to exploring these demand conditions. In order, first, to isolate the effect of different types of competitive situation in product markets, let us assume (a) that each firm knows the location of its "minimum wage," and that the minima of all firms are the same; (b) that the supply of factors other than labor is perfectly elastic to each firm; (c) that the local labor market under consideration is completely isolated from all other labor markets. The effect of removing these restrictions will be considered in the next section; it is obvious that the result will in each case be to render wage differences more likely. We shall assume throughout that union organization is absent. It will also be assumed that only one occupation exists in the market and that differences in individual efficiency either do not exist or are taken into account through the use of efficiency units.

The average and marginal net value productivity of labor for any firm in

[4] This does not mean that only a rising supply curve can be derived under full employment; horizontal, vertical, "kinked," and zigzag curves may also be derived from various combinations of assumptions. The argument of this and the two following paragraphs is much more fully developed in my article on "The Supply of Labor to the Firm," *Quart. Jour. Econ.*, Vol. LX, No. 3 (May, 1946).

the market may be represented, as in the figure below, by curves of the type *ANP* and *MNP*, while *OA* represents the minimum wage. It is possible to introduce discontinuities into the marginal productivity curve by assuming similar discontinuities in the firm's marginal revenue curve.[5] The results which can be obtained in this way, however, are probably of rather short-run



significance, and results derived from a continuous marginal productivity curve can be taken as approximately correct over considerable periods of time.

It is clear that the figure does not represent an equilibrium position for any firm in an industry to which entrance is open, whether the situation is one of pure competition, monopolistic competition, or oligopoly. If new firms can enter at wage rate *OA*, then *ANP* and *MNP* will be forced down

[5] For example, vertical discontinuities in *MNP* may be obtained by assuming that prices are not varied continuously with changes in cost—for example, that prices are never changed by less than 5 per cent, or that prices are set only in certain "brackets" or "price lines," or that prices are changed only at fixed intervals of time. Horizontal discontinuities can be introduced by assuming that the demand curve for the product is itself discontinuous and that marginal cost is constant over the relevant range; if a horizontal section of the marginal productivity curve happened to coincide with a horizontal supply curve of labor, the equilibrium employment of the firm would be indeterminate over this range. These complications will be ignored here.

until *AB* becomes tangent to *ANP*. Thus even if a firm had established a wage rate above *OA* while profits in the industry were temporarily high, it would not be able to maintain this wage rate but would be forced back to *OA*.[6]

If, however, the firm in question is a monopoly, in the technical sense, it will be free to pay any wage rate between *OA* and *OC*. As the wage rises toward *OC* output will decline, the price of the product will rise and profits will diminish. At each wage rate the monopolist can choose a rate of output which will maximize profits, but the maximum of these maxima will be obtained at wage rate *OA*.[7] The possible reasons why the management of a monopoly might choose to forego maximum profits and pay a wage rate above *OA* need not be discussed, though some suggestions on this point are offered in Section III below. It is sufficient here to indicate the existence of a range of managerial discretion and the stability of any wage rate within this range.

The preceding paragraph relates to a monopoly whose prices and profits are limited only by the position of its demand curve. A public utility limited by law to a fixed rate of return on its investment could pay any wage between *OA* and *OC* with complete indifference, provided that the costs deducted in arriving at *MNP* include the legal maximum profit. A monopoly selling to a government agency on the basis of cost plus a fixed fee or cost plus a fixed rate of return on capital could also, without affecting its profits, raise wages to any level which the purchasing agency could be induced to accept. If the price included cost plus a profit calculated as a fixed percentage of cost, the firm's profits would be increased with each increase in wages. Thus in these cases there is no reason to expect *OA* to be selected as the wage rate.

The case of oligopoly with closed entrance is somewhat more complicated. If producers do not coöperate with respect to product prices, then prices must fall to equality with average cost, and the wage rate of each producer must be *OA*. If, however, there is price coöperation—which may mean anything from a close-knit cartel agreement to simply taking account of the probable reaction of other firms in the industry to a price change—the resulting price, demand conditions permitting, will be somewhat above average cost. Each firm will then have something of the monopolist's latitude with respect to wage rates: it can pay anything between *OA* and the wage which would just reduce its profits to normal. The freedom of each producer is qualified, however, by the necessity of maintaining cordial relations with

[6] A wage higher than *OA* can be established permanently if, while the industry is out of equilibrium and profits are above normal, a union enters the industry and enforces a wage greater than *OA* from all firms, at the same time preventing any new firm from entering the industry at a lower wage. But this amounts to saying that the minimum wage *OA* has now been raised by trade union action and does not constitute an exception to the statement just made.

[7] If profits were introduced into the figure as a third dimension, *MNP* would resemble the backbone of a mountain range sloping downward on either side and also running downward as one goes from *AB* toward *CD*. *MNP* is a locus of profit maxima, and the greatest of these maxima will occur at its intersection with *AB*.

other producers. If most firms in the industry choose to pay wages considerably above *OA*, then a firm which pays only *OA* may be suspected of undermining the price agreement and pressure may be put on it to come up to the general industry level. One would, therefore, expect a certain clustering of wage rates rather than an even distribution over the possible range. The oligopolists may even agree to pay the same wage as a means of buttressing the price agreement. If they seek also to maximize their profits, the agreed wage will be *OA;* but other motives may dictate selection of a higher wage.

Under the conditions assumed, then, the wages of firms operating under conditions of pure competition, monopolistic competition, or oligopoly with either free entrance or uncontrolled prices, will tend toward equality at *OA*. Monopolies and members of oligopoly groups with closed entrance and controlled prices will also pay *OA* if they wish to maximize profits; if they are willing to accept a lower level of profits, however, they can choose to pay wages above *OA* by amounts varying with the position of their demand curves. Firms whose prices are set by government acting either as purchaser or regulator are still more likely to pay wages above *OA*. Thus, in any labor market containing firms of these latter types, one would expect to find some dispersion of wage rates for comparable work.

II

Let us now consider the consequences of removing some of the assumptions made in the previous section. Suppose, first, that a firm in a competitive industry is able, because of imperfections in the market for a factor other than labor, to purchase that factor more cheaply than its competitors.[8] Suppose further that this advantage is not open to would-be entrants to the industry. Then part or all of the surplus income accruing to the advantageously-situated firm may, at the discretion of management, be transferred to labor through higher wages. Thus even firms subject to pure or monopolistic competition in product markets may have something of the monopolist's latitude with respect to wage rates.

Second, suppose that the labor market under consideration is only one of many, and that these markets have differing "minimum wages." This implies that movements of labor and capital are not sufficiently rapid to eliminate inter-area wage differences within the period of time taken into account. Now suppose the firms in a competitive industry are distributed among these markets in such a way that their minimum wages form a statistical array resembling the so-called "bulk-line cost curve." Then the price of the product will tend to settle at a level sufficient to cover the minimum wage of a firm at, say, the ninth quartile of the array. If costs other than wages are uniform throughout the industry, all firms below the ninth quartile will have some latitude with respect to wage rates. Each of these firms can pay anything between the minimum wage in its own area and the

[8] This may mean purchase of a higher quality of a factor at the standard price rather than payment of a lower price for the same quality. It seems likely, for example, that especially able managers will receive less than their full contribution to production, particularly in a situation in which individual income-tax rates are high.

minimum wage of the "marginal" firm; the lower the minium wage in a particular area, the wider the range of discretion of firms in that area. This situation is stable, of course, only if there are obstacles to new firms entering the industry in the areas with the lowest minimum wages; otherwise, the industry would become concentrated increasingly in those areas, and dispersion of wage rates arising from geographical dispersion of the industry would disappear. If one brings into the picture not one industry but a large number of industries, each with a somewhat different geographical distribution, then it is clear that each labor market in the economy may have its own pattern of inter-firm wage differences, which will not be reproduced exactly in any other market.

The individual firm is caught between the area and the industry. Conditions within the area, particularly the wage levels of other firms, determine the minimum which it must pay. The wage rates of other firms in the industry, *ceteris paribus*, will determine the maximum which it can afford to pay. If the latter figure is less than the former, the firm will in time be forced out of operation; but if it is greater, the firm can be guided by the wage level either of the industry or the area. Developments in the industry may lead the firm to make wage changes independently of any developments in the local labor market. Indeed, for firms in competitive industries which are geographically dispersed, it appears that the industry is normally the dynamic influence in bringing about wage changes, while the influence of the local labor market is merely passive or permissive.

Third, let us admit the possibility that different firms in the same labor market may have different minimum wages. One reason for this is that wage differences which have persisted for some time become customary and workers tend to presume that they should continue. A wage rate which would be accepted if paid by a traditionally low-wage firm may provoke a revolt if adopted suddenly by a high-wage firm. Each firm thus has its own minimum wage which is related to its present and previous actual wage rates. These minima lie one above the other like steps on an escalator. The relative ranking of the various firms doubtless changes gradually over long periods of time, but at any one time it is rather firmly fixed in the minds of both workers and employers.[9] Any attempt by one firm to drop its wage rate below the minimum expected of it, or to retain the same wage rate when the wage escalator is moving upward, will cause serious labor unrest.

This circumstance helps to explain not only why wage differences persist but also why they may widen with the passage of time. Once a set of differentials has become customary, a management gains no credit with its workers by merely doing what is expected of it. It can add fresh luster to its reputation for generosity only by *increasing* its wage differential over other firms. But this new differential will in time become customary, and so on.

[9] Witness the large number of cases in which a firm requests the War Labor Board to approve a wage increase in order to enable it to maintain or restore its "historical position" in the area wage structure. Such requests are uniformly refused, and must be refused under the wage stabilization policy. There can be no doubt, however, that this refusal frequently works severe hardship on the firms involved.

The differentials presently existing in most United States labor markets are clearly too large to have been attained in one jump, and can only be understood as the outcome of some such historical process. Investigation might reveal a long-run tendency for local wage-structures to open out like the ribs of a fan, the higher-wage firms increasing their advantage in successive jumps, each of which gradually becomes conventionalized.

Under the assumptions of Section I, one would expect to find in any locality a "prevailing rate" of wages, from which only monopolies or quasi-monopolies could deviate. When the three assumptions just discussed are relaxed, however, the likelihood of a "prevailing rate" is removed. There is now no reason why each firm in the market should not have a different wage rate. Moreover, there is no longer any reason to expect a clear relation between a firm's wage level and the type of product market in which it deals. The effect of differing types of product market, while still present, is mingled with the effect of conditions influencing each firm's cost position in its own industry—notably the wage levels of other areas in which rival producers are located, and the cost of factors other than labor to this firm as compared with others. Added to these factors affecting each firm's ability to pay are differences in managerial judgment concerning the wisdom of paying as much as one can. The actual wage structure of an area reflects the composite effect of these influences. The effect of each can be gauged only approximately and only through studies which reach beyond the area concerned to the cost-price structure of each industry represented in it.

With these considerations in mind, it is possible to suggest one or two reasons why a firm may choose to pay a higher wage than it has to at the moment. The firm is likely to be uncertain about the precise location of its wage minimum, particularly under dynamic conditions in which the minimum may change very frequently. If it can afford to do so, it is likely to "play safe" by paying somewhat more than its estimate of the minimum. Different firms may thus be at differing distances above their wage minima because of differences in the accuracy of their estimates and also because of differences in the safety margin which they feel able to afford.

The degree of uncertainty is increased if one takes into account a factor hitherto excluded from the discussion, *viz.*, variations in individual efficiency. A reduction in wage rates will lead to a less than proportionate reduction in wage cost per efficiency unit of labor; for efficiency will fall both through a lowering of the grade of labor which the firm can recruit and through a reduction in the efficiency of those already employed. The wage level which would actually yield minimum cost per efficiency unit could perhaps be determined by successive wage reductions. But since such experimentation is dangerous, it may not be undertaken unless the pressure of competition compels it, and the firm may continue at a level of wage costs somewhat above what is strictly necessary.

A monopoly or a closed oligopoly group may pay more than the minimum wage in order to render the industry less attractive to potential competitors. It has frequently been pointed out that a monopolist may for this reason charge a price below that which would maximize profits. But profits can be

held at a moderate level by paying high wages instead of by charging low prices. Provided potential competitors take the wage level of established firms as an indication of what they would have to pay to secure labor, this technique may be highly effective.

Payment of a relatively high wage may also simplify the problems of personnel management by facilitating recruiting of labor, stabilizing the working force, stimulating efficiency, improving labor coöperation with management, and so on. Maximizing profits is hard work. Some sacrifice of profits in order to make the job of management easier may be perfectly "economic" action from the standpoint of the managers, though not from the standpoint of the owners.

III

The argument has been directed toward explaining the long-run persistence of differences in wage *levels* within a local labor market. But it is also relevant to the problem of how wage *changes* occur and how changes in one labor market are transmitted to others. Under usual assumptions about labor market structure one would expect that, during a cyclical upswing, wages would rise in an area *only* when full employment had been reached. The area would then begin to draw labor from other areas and, as full employment was reached in more and more areas, wage increases would become general throughout the economy. During periods of cyclical decline this process would be thrown into reverse. In either case, local labor markets would be linked together primarily by inter-area movements of labor, and the rapidity with which wage changes were transmitted throughout the system would depend on the rapidity of this movement.

This sort of model, however, does not explain the fact that wage rates frequently rise in an area while heavy unemployment still exists,[10] and that wage impulses are transmitted within and between labor markets much more rapidly than could be explained by actual or even potential movement of labor. These facts can perhaps be more nearly explained by the considerations set forth above. Suppose that the leading firm of a "controlled oligopoly," located in labor market A, raises wages—perhaps as prelude to or aftermath of a price increase. The wage increase is followed by another member of the industry, located in labor market B. This action will raise the estimates which other firms in area B make of their own minimum wage; as demand conditions permit, some of them will make increases to maintain their "historical position" in the wage structure. Thus the whole "escalator" of minimum wages in the area moves upward, carrying actual wage rates along with it. But the firms in area B have competitors in areas C, D, etc., some of whom will be influenced by the wage changes in B, and so on. A sym-

[10] Indeed, statistics of average hourly earnings by industry indicate that wage rates tend to rise first and fall last in industries in which cyclical unemployment is greatest. See the discussion of this point in John T. Dunlop, *Wage Determination Under Trade Unions* (New York, Macmillan, 1944) pp. 130-43. It would be interesting to make a similar analysis on an area basis, but wage statistics are not now organized in such a way as to permit this.

metrical explanation can be offered for the transmission of wage decreases.[11]

Thus, through industry linkages, a wage change in one area may be transmitted rapidly to distant and apparently unrelated areas. This need not involve any actual or even threatened movement of labor between areas. Inter-area movement of labor appears indeed to perform, not its traditional function of equalizing wage rates, but the quite different function of equalizing unemployment ratios in different areas. During recession and depression labor mobility declines greatly and, because of differences in the cyclical variability of different industries, unemployment piles up more rapidly in some areas than in others. As recovery gets under way, movement sets in once more toward areas in which the unemployment ratio is relatively low.[12] But the areas in which unemployment is low are not necessarily those in which wage rates are high.

IV

The wide gap between the accepted models of the labor market and the actual behavior of wage rates and employment has inhibited systematic research in this field. This paper has attempted to advance hypotheses around which the wealth of data available in any local labor market may profitably be organized. It has been suggested that attention should be concentrated primarily on the supply conditions of labor to the individual firm, the characteristics of the product market in which each firm deals and its cost position relative to other firms in its industry, the considerations influencing the exercise of managerial discretion with respect to wage rates, and the way in which changes are transmitted among firms and labor market areas. It is important also to make accurate measurements of wage rates, appropriately defined, and to extend these measurements over as long a period as possible.

[11] The only important difference in the two cases is that the firm initiating a wage decrease is likely to be a member of a competitive industry. Dunlop's observation that "declines in product prices and not unemployment constitute the effective downward pressure on wage structures" (*op. cit.*, p. 146) is entirely consistent with what has been said here.

[12] See on this point the studies of the Oxford Institute for Economic Research, reported in *Oxford Economic Papers*, October, 1938, and September, 1940.

COMMUNICATIONS

Concept and Teaching of Economics

The teaching of economics faces problems of reconversion as perplexing as those of the national economy. During the war, instruction in this field has been partly discontinued, partly shifted to such timely subjects as war mobilization, economic warfare, and demobilization. While the theme of war economy may remain of interest, it cannot possibly serve any longer as the focus of instruction. What is the new focus going to be? Economics will now be taught again to large numbers of students including thousands of returning veterans, mature and critical men. How can it be made intelligible to them and worth their effort?

To relapse into pre-war "normalcy" in economic teaching is as impractical as in most fields of economic policy. There is no satisfactory pre-war norm. The teaching of economics was in an advanced state of crisis when the war began. The dicussion that appeared in the *Review* during recent years brought to the fore a few aspects of the crisis. Is it possible to introduce students to economics through a course in economic principles?[1] If so. what are the principles?[2] Is there a curriculum in economics, or should students be invited to take any course at any time?[3] Has economics lost the character of a unified discipline?[4] If so, could a new discipline be built upon a broad course in contemporary civilization?[5] Why do students "begin their study of economics without a great deal of enthusiasm" and proceeding to lose what little they had, in spite of the significance and topicality of contemporary economic affairs?[6]

Dissatisfaction of teachers and students and the prospect of severe public criticism make it necessary today to examine these questions and to find new

[1] W. W. Hewett, "The Use of Economic Principles in the Teaching of Applied Subjects," *Am. Econ. Rev.*, Vol. XXX, No. 2, Pt. 1 (June, 1940), p. 334. See his references to earlier criticism.

[2] R. W. Harbeson, "The Case for an Introductory Course in Economic Theory," *Am. Econ. Rev.*, Vol. XXXIII, No. 1 (Mar., 1943), pp. 121 *ff.*

[3] M. Bronfenbrenner, "The Introductory Course: Comment," *Am. Econ. Rev.*, Vol. XXXII, No. 3 (Sept., 1942), p. 558.

[4] W. H. Hamilton, "The Institutional Approach to Economic Theory," *Am. Econ. Rev.*, Vol. X, No. 1 (Mar., 1919), suppl., p. 312.

[5] L. M. Hacker, "The Contemporary Civilization Course at Columbia College," and discussion by M. A. Copeland, *Am. Econ. Rev.*, Vol. XXXV, No. 2 (May, 1945), pp. 137 *ff.*

[6] R. Clemence and F. S. Doody: "Modern Economics and the Introductory Course," *Am. Econ. Rev.*, Vol. XXXII, No. 2 (June, 1942), p. 334.

ways of teaching the subject, especially at the introductory level. In this we need not start from scratch. Many good teachers have found ways of by-passing this or that dilemma of teaching, pure "economicism" and value theory, or at least the preoccupation with "static economics" and the state of perfect competition. Moreover, considerable experimentation in new forms of basic instruction has been carried out. For instance, the contemporary civilization course at Columbia, a broad survey course developed over 26 years, may be taken as a real contribution to a reform of economic teaching. On a more modest scale, the basic courses in political economy at Bennington College attempt to solve the problem through intensive study of selected phases of social thought and experience. Other experiments are likely to be in process and should be discussed freely.

In this article, I wish to examine why the introductory course in economic principles tends to be a failure, and to propose its abolition. I suggest that it be replaced by a broad basic course in political economy that acquaints the student with the experiences and the problems of the commonwealth, seen in their historical context from the viewpoints of economics, politics, anthropology, sociology, and philosophy. This course should serve students who wish to specialize in economics as well as those who want to go on in any other science or art. For the first group, I want to sketch a few features of a curriculum in economics.

The Failure of the Economic Principles Course

The strategic part of any curriculum is the introductory course. If this course is successful it stimulates the student's interest, focuses his mind on the relevant and organizes his work. In the frame of liberal education, the purpose of the introductory course is to give the general student an education and the specialist a foundation in the field.

In the past, the usual point of departure for a student in economics was an introductory course built around the principles of economics—that is, elementary economic theory. Often this course was made a prerequisite of specialized studies, in the expectation that it would give the student the unifying point of view and the tools for an understanding of the specialized courses. This expectation was more often deceived than fulfilled. A considerable gap tended to develop between the student's work in economic principles and his specialized studies. Instruction in the latter came to deal with the particular and technical problems of business and public administration without much attention to economic theory, while advanced work in economic theory tended to be formalistic and well-nigh inapplicable to anything happening in the world. No wonder that the student found it most difficult to discover the alleged unity of economic science and the bearing of economic thought on the problems of our time. Instead he often came to see in economics a series of "overlapping unrelated inquiries in which economic principles play an unimportant rôle,"[7] or "a branch of the forensic arts in which any opinion

[7] Hewett, *Am. Econ. Rev.*, Vol. XXX, No. 2, Pt. 1, p. 334.

is as good as any other, and in which acceptance is dependent on oratory and authority."[8]

It makes little difference whether this course in principles is given to the neophyte or preceded by a preliminary superficial survey of economic institutions or history. Nor does it matter much whether it is taught with reference to the choice problems of Robinson Crusoe or the groceries-buying housewife, in the light of the neoclassical system or the Keynesian anti-system. The theory does not coördinate the facts; the making and unmaking of abstractions absorb more energy than they release for the mastering of the material. Whatever the student may get out of this work in the way of logic or mathematics—and I have heard economics courses recommended to students on this ground alone—whatever he may gain in perseverance or ability to use the language of economists, he does not get an education in economics.

Economic Theory and Social Economy

It would not be fair to accuse the student of a lack of intelligence or the specialist of disregard for an existing integrated system of economic thought. There exists no integrated system of specifically economic thought relevant today, that is to say, no consistent body of doctrine capable of acting as the unifying agent of applied studies.

Ever since it appeared as an independent discipline, economic theory concerned itself with the rationale of a self-regulating system of markets (market economy). Such an economy never existed anywhere, however old and well-estabished the institution of specific markets may be. But it is clear that the idea of realizing such a system dominated the western world in the 19th and early 20th centuries and was carried from there to the remote corners of the globe. At times the idea had the features of a crusaders' creed, for instance, in the 1830's in England, and in the 1920's.

The fact that the system was never realized may have led critics and policy makers into errors. Often enough, what appeared as mercantilistic folly to Adam Smith or as collectivistic folly to Herbert Spencer or the "orthodox" of the 1920's were perfectly rational actions in the absence of the balancing mechanism of a full-fledged market economy. Nevertheless, as long as the great experiment dominated the mind of western man, it was meaningful to expound pure economic theory. The value and equilibrium doctrines of Ricardo and Marx, Walras and Marshall, Hayek and Hicks made sense in this context. The practical issues of free trade and the free labor market, the gold standard and the budget of a mere police state for a time invited applications of systematic economic thought and offered the theorist opportunities for brilliant duels and charges against "cranks" and the multitude of "special interests." Even if the management and accounting practices of business firms and state treasuries were not greatly affected by systematic theory, policy making was.

Since the Great Depression the drive to establish a self-regulating system of markets has lost its potency and fascination, and the theory of such system

[8] Bronfenbrenner, *Am. Econ. Rev.*, Vol. XXXII, No. 3, p. 557.

has therefore lost its relevance. At present we cannot even point to a sector of economic life—let alone the economy as a whole—in which the uncontrolled market has a chance of becoming an independent, effective regulator of production and consumption. The "other things" that economic discourse used to assume constant—political volition, social objectives, national and racial drives—stand revealed as dynamic determinants of economic activity. And in the place of a few narrowly circumscribed areas left to the rule of "extra-economic" determinants, charity, infant-industry protection, or public utilities, appears an all-embracing pattern of socially determined economy. The general forms of this pattern can be found in the experience of the last 15 years, in this country and abroad, in a great variety of specific institutions and procedures. Under these conditions, the sparring about an economic theory of value and equilibrium, and the crusade against the interference with market self-regulation by protectionists, collectivists, monopolists, and currency cranks has become a quixotic enterprise.

When John Maynard Keynes asserted that market economy may produce persistent involuntary unemployment and that it balances itself by fluctuations of employment rather than prices, wages, and interest rates, he closed in effect the epoch of pure and systematic economics. Whether or not his theory is correct, the great economist confirmed the widespread feeling that society cannot renew the experiment of market economy without paying a price that it is obviously unwilling to pay; periodic and prolonged mass unemployment. However useful Keynesian theory may be as a stimulant to certain ways of action, it does not offer a positive system of economics. It entrusts public authority with the task of restoring or maintaining economic equilibrium.

The adversity of historical development need not spell the end of systematic economic theory, were it not for the fact that nothing in human experience but the drive for a self-regulating market economy ever called for a specifically and purely economic rationality. Neither history nor anthropology, neither the experiences of primitive societies, the middle ages, mercantilism nor those of contemporary Russia, Britain, and America makes a purely economic theory of price, distribution, and choice seem sensible. Neither do they encourage us to proceed as if all the relevant aspects of cost and satisfaction could be expressed in money units, that everything desirable but scarce could be given a price tag, everything undesirable but required, a cost tag, and finally that rational choice could be made on the basis of this system of prices alone. Moreover, nothing but the fiction of market economy permits the student of economic life to reduce the rationality of producers and consumers to that of buyers and sellers.

Whether it is the traditional fiction of capitalistic market economy or the utopia of a socialist state playing market economy, unless we think of market economy it does not make sense to claim that a specifically economic rationality should be the sovereign ruler over the production and distribution of goods. Therefore, the criterion of such rationality, behavior in accordance with the price gauge, is not generally applicable.

Behavior is often reasonable in spite of its apparent conflict with the price gauge; for we know that the price gauge is (1) subject to manipulation and

(2) an incomplete guide to rational action. No intelligent production manager anywhere in the world will believe that prices are merely data. He knows that they are made, by whom, and how, and are changed by industrial and governmental agencies that respond to political and economic pressures. Nor would it do him any good to take existing prices of land, labor or products as his only, or decisive, guides to action. He cannot well overlook the fact that the monetary commensurability of the various wages and prices does not supersede the incommensurability of the social and political situations that surround the respective groups or workers, suppliers, or customers. The rationale of enterprise and performance comprise a great deal that is inaccessible to the price calculus.

This does not at all destroy the usefulness of the price calculus as a managerial device. Nor does it bar independent thinkers from pursuing the logic of any system they please to imagine. The argument only indicates that we cannot coördinate economic facts by the rationality of pure economics; and it suggests that the price calculus should be understood as just one of the various devices of rational management.[9]

As far as the coördination of economic facts is concerned, it is clear that where there is no self-regulating economic system there can be no equilibrium in purely economic terms. Therefore the congenital preoccupation of systematic economic theory with "a search for levels of equilibrium rather than an unfettered study of economic processes," which John M. Clark criticized, appears as its decisive disability. Since systematic theory "hardly dares press beyond . . . those aspects of broad processes which can be treated in terms of an equilibrium of the exchange value sort,"[10] nearly all of modern economic life has come to lie outside the scope of such theory. Economic life can only be understood within a framework that comprises both the disequilibrating and the equilibrating powers of political, religious, and social drives. Certainly, our war economy has taught us that allocation and rationing of goods by the government, no-strike pledges by trade unions, price discipline of business men, etc., can play a decisive rôle in balancing the economy.

It appears then that we do not have today a consistent and self-contained body of economic doctrine, that is, an economic system. As for the actual ways of our economy and that of other countries, the term "mixed economy" is an understatement of our inability to press what we do and see into a system. Economics as a doctrine of rational behavior in a self-regulating system of markets has no significant place in our life. But economics as the "unfettered study of economic processes" is of vital importance.

It is not surprising therefore that people actively concerned with economic analysis and policy look in vain to systematic theory as a realistic and con-

[9] Probably the advice to Russian managers to observe "the law of value" is no more than another reminder of the need for a more effective use of the price calculus. But it would be most surprising if they were allowed to place "the law of value" above the complex of party and state, regional and local requirements. See discussion in this *Review*, 1944 and 1945.

[10] John M. Clark, "Economics and Psychology" in *Preface to Social Economics* (New York, 1936), p. 93.

structive guide to what is and what should be done. Nor is it surprising that the principles course that introduces the student to that theory shows a tendency to degenerate into an oblique and irritating exercise in logic. But it would be surprising and deplorable if the teachers of economics continued to rely on an educational device that does not educate, on a method of unification that distracts, and on a stimulant to understanding that brings disappointment and confusion to the student.

A Basic Course in Political Economy

To evolve a new and comprehensive theory of political economy is a challenge to all economists today. It demands a fresh inquiry into the nature and causes of the wealth of nations. No active economist can overlook this challenge. At the same time no teacher of economics can afford to await the arrival of a new Adam Smith while offering the old for guidance to his students, or worse, letting them go with the propositions of Smith's dogmatic epigoni.

It is possible today to reform the teaching of economics on the basis of two fairly widely accepted ideas: (1) It is necessary to impress the student from the very beginning with the essential unity of the social studies both with regard to their intellectual roots and their subject matters.[11] This means that the basic course in political economy must strike out for a viewpoint that commands a wider area than the conventional area of economics. It must comprise materials, methods, and approaches offered by politics, philosophy, sociology and anthropology. What is needed is of course not a sort of algebraic sum of the conventional offerings in these departments, but a synthesis of the basic contributions of these disciplines. This may sound more formidable than it is. The minimum requirement is literacy of the teacher in the broader field.

(2) History being the "laboratory" of social theory, the basic course must bring history to bear on the study of economic affairs. This means that the origin and meaning of economic institutions, movements, concepts, and policies must be examined in their historical context, as part of the broad process of human history.

How to achieve the synthesis of disciplines and the effective use of the historical approach are major problems of conception and teaching. No final solution is available. There is a wide field for bold new enterprise. Columbia's two-year survey course, the current form of which has been aptly described by Hacker,[12] holds out a good deal of promise as an introduction to intermediate work in economics, and indeed that of various disciplines of social studies.

At Bennington College, on the other hand, the basic courses in political economy are taught as highly selective one-year courses, deliberately avoiding

[11] This need was well stated in the presidential address of Professor A. B. Wolfe on the subject of "Economy and Democracy," at the 56th Annual Meeting of the American Economic Association, *Am. Econ. Rev.*, Vol. XXXIV, No. 1 (Mar., 1944), pp. 1 *ff*.

[12] Hacker, *Am. Econ. Rev.*, Vol. XXXV, No. 2, pp. 137 *ff*.

the survey-course approach. In one of these courses, taught by the author, the students study several historical situations, their characteristic events, issues, and intellectual contributions. The situations have been chosen for their bearing on the cultural crisis and the discoveries of our time, and are discussed in this sequence:

(1) The origin and significance of the Ghost Dance among the American Indians in the late 19th century; (2) the crisis and debacle of the French Republic, 1933-1940; (3) the transformation of English society and the beginning of the experiment in market economy, 1750-1850, especially the time around 1800 and the thirties; (4) the foundation of American democracy; (5) the "safety valves" of market economy; (6) the Great Depression and the War. The students read original contributions, for instance, Alexander Lesser's book on the Pawnee Ghost Dance; a variety of contemporary reports and some background material on the French crisis; Karl Polanyi's *Great Transformation;* the classics, Burke, Owen, Mantoux, the Hammonds, Marx, Dicey, Disraeli, etc., on England; Hobbes, Locke, Rousseau, *The Federalist,* and books by Carl Becker and Charles Beard on the foundation of American democracy; Turner, Webb, Hacker, and others on market economy and industry in the United States; E. H. Carr, H. W. Arndt's *Economic Lessons of the Nineteen-thirties,* Alfred W. Jones's *Life, Liberty and Property,* and books by Frederick Lewis Allen and Reinhold Niebuhr on the Great Depression and the War. Textbooks are not used, except for reference purposes, for instance, some chapters in Crowther's *Outline of Money.* Class meetings are devoted to coördinating the material and the students' individual studies of such authors as Malinowski, Toynbee, Tocqueville, Mises, Wootton, Berle and Means, Blaisdell, Lenin, and papal encyclicals. Wide gaps in the course program are accepted in the belief that the understanding of one human situation, presented in full view, may well be the best preparation for an understanding of any other human situation. It is also believed that the achievement of the desirable breadth and continuity of knowledge must rely on the curiosity and initiative of the individual student beyond the work in a single course, and on his ability to strike out on his own.

A course built around a set of specific situations or happenings makes it possible to resolve the conflict between theories and institutions as a focus of teaching. Ideas as well as organizations and laws are created and destroyed at certain times and in certain places. In fact, their interrelation, their vitality or decay, their meaning and change of meaning cannot be understood outside the framework of specific historical situations. The method of this course helps to avoid the dilemma that teachers have encountered when trying to decide whether it is better to organize their courses along sequences of abstract propositions or sets of uncorrelated descriptions. It makes it possible for the teacher to let both ideas and institutions emerge in a natural way, that is, through the story of a human event.

In the order of the six topics outlined above there appears a series of important economic and political problems. For the purpose of this article it may suffice to indicate the main economic problems that are presented to the student in each of the six situations: (1) social and private economy, natural

resources; (2) currency, incomes, and employment; (3) poverty and industrial labor, generation and rationale of market economy, economic fluctuations, protectionism; (4) taxation, the public debt, industrialization policy; (5) investment and employment opportunities, corporations and labor unions. The sixth topic, the Great Depression and the War, is used to examine how the economic institutions, concepts and policies discussed before were challenged and how the challenges were met, in theory and practice. Similarly a set of political-anthropological problems runs parallel to the topics. Clearly the topics should be chosen and arranged in such a way as to bring out the problems and characteristic approaches that economists and political scientists have found relevant, in the past and the present. As far as their methods of analysis are concerned, they are best understood when presented in close relation to the substance of their teachings.

Such courses should be effective substitutes for courses in the principles of economics. After having taken the basic course students should be ready to go into intermediate, specialized work in economics, equipped with a general orientation, a taste for the relevant, and a foundation in economic knowledge. They should be conscious of what they know and what they do not know.

Observations on More Advanced Work

To gain well-rounded knowledge, the student majoring in economics will need more substantial work in economic history and theory. He must expand and consolidate his knowledge of concepts and analytical techniques. Likewise he must become familiar with some of the special skills and problem areas, such as statistical techniques, economic geography, management, labor and industry, agriculture, fiscal policy, money and banking, international economic relations. On the whole, colleges seem well-prepared for instruction in these special fields. There are plenty of experts and good teachers. But it seems reasonable to expect that the general orientation and the sharpening of the students' interest in the basic course will affect the way the special courses are taught and received.

The economics major should conclude his college career with work designed to bring together on a higher level the elements acquired in the basic and intermediate courses. This might be done in a seminar in contemporary economic policy. Such a seminar could be focused on one contemporary issue, for instance, a measure of legislation enacted or contemplated. The students would study the theoretical and technical problems, the historical precedents and consequences, and the social ramifications of the measure. The group should consider the entire complex of legislative and administrative, technological and market aspects. Such work should prepare the student for intelligent and active participation in policy making, as executive, adviser, or citizen, and test his capacity for research, thinking, and writing. It might be paralleled by advanced work in any one of the special fields.

In this curriculum, the student would encounter the concepts and methods of economic analysis at all levels, basic, intermediate, and advanced. In contrast to past procedure, this information would not be offered to him as the

unifying agent of economic studies, but as the intellectual product of specific situations or authors, capable of dealing with specific problems: the *Tableau Economique* and the equation of exchange, marginalism and Keynesian employment theory, the gold standard rules and Oscar Lange's rules for managers. To evolve his point of view the student should rely on an understanding of history and of the relation of the economic to the whole of human experience. In this way, he might also find out why "laws of economics" could be regarded at one time as sovereign governors of man's material life, while today—and throughout most of history—economics is knowledge about the management of production and distribution. When this understanding ceases to be a mental reservation accompanying a man's preoccupation with an economic "apple-pie world," and when it is applied productively to the tasks at hand, it will give economics a much stronger position in the college.

Summary

There are many indications that we need a new conception of the curriculum in economics. Teaching experience and theoretical examination of the subject matter of the economic-principles course suggest the need for an educationally more valuable procedure. The course in economic principles should be abolished because there are no specifically economic principles capable of unifying our economic experience today. To familiarize the student with the social aspects of production and distribution should be the purpose of economics in college education. A broad course in political economy, combining viewpoints and selected materials of all the branches of social inquiry, and taught with reference to history, appears as the best point of departure for the major in economics and the best provider of elementary economic literacy for the general student. The experiences of Columbia and Bennington indicate various practical ways of developing such a course. The latter in particular points to a way of avoiding the survey course approach and the dilemma of "theory *vs.* institutions" by centering the work on a few specific historical situations. The economics major should follow up the basic course with a variety of special studies and have a chance to coördinate these studies in an advanced seminar on economic policy.

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* The author, professor of economics, now on leave of absence from Bennington College, acknowledges indebtedness to Karl Wm. Kapp of Columbia College for stimulating ideas and suggestions that emerged from long discussions of this subject.

Monopoly Dissolution: A Proposal Outlined

Maintaining Existing Production Arrangements and Creating Competitive Sale

The failure of our national antitrust policy to create and maintain a highly competitive economy is manifest. Although larger appropriations for antitrust prosecutions are clearly desirable, experience has shown it to be virtually impossible to restore competitive conditions by criminal penalties and

dissolution decrees. Where an industry is already dominated by a small number of concerns, it is impossible to restore competitive conditions with the instruments at hand.[1]

Production and sale in much, and possibly most, of manufacturing, are most economical if conducted on a scale so large that the entire market is supplied by a few concerns. Large sectors of mining and distribution are also most economically conducted on a large scale. Mutual dependence where there are only a few rival concerns inhibits competition even in the absence of collusion and may result in prices not very different from those a monopoly would charge. To prohibit a single firm from supplying more than a fixed small proportion of the total market, by whatever means, would result in wasteful methods of production and distribution in such industries. Thus, even where domination of a market can be proved, the courts have been unable to find measures which would retain existing economies while creating competition sufficient to drive prices down to costs.

This paper outlines a plan which aims to preserve existing economies of large-scale production and at the same time to strengthen the downward pressure on prices in monopolistic industries. Though designed primarily to bring about price reductions, this proposal should largely eliminate the abuse of rivals by dominant concerns and stimulate cost reductions. Broadly speaking, this plan would retain intact the producing units currently in operation while creating a number of independent selling units that would depress prices near their competitive levels. These selling units would jointly own and manage a single production system and would press for its economical operation while pursuing independent sales policies. This plan would be almost entirely self-enforcing and would not require continued intervention or policing by an administrative agency. In outline, the proposal calls for the following steps:

1. The plan would be put into effect after a court or special administrative agency found an industry to be less competitive than the public interest required.
2. The administrative agency would determine the number of independent selling units required to secure the desired degree of competition. The ideal would be a number of sellers such that price reductions by an individual firm would not bring forth immediate retaliation from its rivals. Secondly, the number of concerns decided upon should involve a minimum of duplicated selling facilities.[2]
3. Independent selling units would be established in the desired number and trustees would be appointed who would be responsible for initiating the selling enterprises. The administrative agency would issue to owners

[1] Purdy, Lindahl and Carter, *Corporate Concentration and Public Policy* (New York, Prentice-Hall, 1942), p. 351.

[2] These two considerations leave a wide margin of latitude. Theoretically, the number of firms needed to eliminate oligopolistic patterns of business behavior is indeterminate. Beyond the point where the interdependence of rivals' price policies is obvious and direct, the severity of the downward pressure on prices seems to vary directly with the number of sellers.

of the dissolved "monopoly" concerns a share of stock in a particular selling unit in exchange for every share currently owned.

The total amount of stock allocated to each selling unit should be approximately equal. If there is a large owning interest, its stockholdings would be confined to one selling unit and the other selling units would have smaller stock holdings. The number of selling units established would be determined by the number needed to secure rigorous competition rather than by the existing distribution of stock ownership. Big owning interests might be required to reduce their stockholdings to, say, 10 per cent of the total within a few years.

4. The administrative agency would finance the initiation of the selling units by transferring to them for this purpose some of the liquid funds of the "monopoly." If available funds were inadequate, they would be borrowed from the cheapest available source of funds on behalf of the producing concern.[3] The amount transferred to each selling unit for this purpose would ordinarily be in direct proportion to the size of its stock holdings. The selling facilities of the "P.C." would be liquidated and the funds received thereby used to finance the selling units. It is to be expected that the selling units would purchase almost all the "P.C." 's selling facilities.
5. Trustees to initiate the selling units would be selected by the administrative agency. Presumably many of the chief selling executives of the monopoly would be appointed and the others would be chosen for their knowledge of industrial problems and for social-mindedness. The stockholders in the selling unit could replace the trustee when and if they desired. It would be the trustee's first job to arrange quickly for the election of a board of directors, who in turn would select the selling unit's executive personnel.
6. Each selling unit would have the privilege of buying an almost unlimited number of units of the formerly monopolized product from the "P.C." at a price fixed for all selling units alike. An upper limit might be placed on purchases by any single selling unit at, say, 15 per cent of the preceding year's sales by the "P.C." if there is danger that a few firms will buy the entire output and, by collusion, fix high prices.
7. The price charged by the "P.C." normally would equal average total unit costs at a "standard" level of output. Costs would be calculated according to standard accounting procedure and such special procedures as the administrative agency might establish. It is not essential for the success of this plan that the prices charged by the "P.C." exactly cover total costs. Prices above that level would yield profits which would be distributed to the selling units in proportion to their sales. Prices below that level (as where demand suddenly fell and a price reduction was required to clear the market) would be absorbed from the reserve for contingencies.

[3] The producing concern, as the term implies, is that part of the dissolved "monopoly" which produces on behalf of its member selling units. Hereafter it will be denoted by "P.C."

The calculation of costs implicit in accounting techniques is often arbitrary and highly conventionalized. Nevertheless, successful operation of this plan does not require precise measurements of "true costs" since all selling units would be charged the same amounts and since profits would be distributed in direct proportion to sales. Where the "P.C." produces only one commodity, mistakes in accounting would be prejudicial to no one. Where more than one commodity is produced, discrimination against some selling units is possible. Therefore appeals should be permitted to the administrative agency under certain conditions for changes in the allocation of costs among the various products.[4]

8. Profits which remain to the "P.C." would be set aside as a reserve for contingencies up to a fixed proportion of total assets and the balance distributed to the selling units *in proportion to their sales volume.*
9. The brand name employed by the monopoly would remain the property of the "P.C." Selling units could use it or not as they saw fit.
10. Losses suffered by the "P.C." because of sales below the "standard" level would be absorbed by its contingency reserve, which would be replenished from subsequent profits.
11. The "P.C." would be notified of the sales made by the individual selling units and would arrange for delivery in accordance with priority of order. The "P.C." would, therefore, maintain its existing centralized shipping departments.
12. Special costs allocable to individual sales would be paid for by the company making the sale. All delivery costs would fall in this category as well as costs for special services performed by the "P.C." on behalf of individual selling units.[5]
13. Individual selling units could, if desired, be allowed to advertise on their own account, even to use private brands. They could also be permitted to offer special sales incentives like guarantees and credit terms.
14. Votes in the "P.C." would be based upon stock ownership.
15. Long-term contracts in force at the time of dissolution would be handled directly by the "P.C." and profits from these contracts would become part of the common pool.

[4] It is important to observe that this proposal does not call for price fixing by a public agency. The proposal calls for establishing a condition and a series of rules at the time of dissolution which would be policed by private rather than public interests. The proposal incorporates two primary safeguards of its objectives: (1) some selling units have interests antagonistic to the concealment of high prices and profits in the "P.C."; (2) the large number of sellers established is safeguard against collusion in selling—the only known protection against collusion.

[5] If desired, the "P.C." could be permitted to make changes in the product or even produce new products at the request of individual selling units. The selling unit presumably would be required to provide the entire cost of the new equipment required as well as the other costs incurred in making the desired changes. These special services and new products would be priced by the board of directors with technical assistance. Though allocations of costs will never be exact, the success of this plan only requires that all firms agree to the method of computation. In the event of disagreement, appeal to the administrative agency might be permitted.

16. The "P.C." would conduct research, the fruits of which would be available to all members of selling units equally.

In assessing the merits of the plan outlined above, it should be understood that it is only a bare outline and also one of a large number of possible variations. There are surely weaknesses in these suggestions which experience would uncover, and for which experience would probably also provide an answer. However, enough detail is presented to make concrete the thesis that the number of independent selling units can be many times as large as the number of producing plants.[6]

Implications of the Proposed Plan

Lower Prices

This proposal should lower prices where they have exceeded competitive levels by multiplying the number of rival selling units without giving rise to an offsetting increase in costs of production and distribution. There remains the danger of collusion among the individual selling units. It might be argued that the joint management of the "P.C." makes "coöperative" pricing highly likely. The chief safeguard against collusion among the selling units is their large number. Even in many trades where there are active trade associations or coöperation for the procurement or prevention of legislation, price competition has been keen if there were many sellers. Examples among the retail trades are drugs, dry goods, groceries and furniture. Moreover, in the appointment of trustees in the new selling units, the administrative agency would presumably try to find men who would refuse to collude and who might even disclose attempts at collusion to the administrative agency. Collusion would also be inhibited by buyers playing one seller off against the others. Buyers have a strong incentive, and fairly potent bait, for luring individual sellers away from collusive arrangements. Finally, the fact that selling units would be fairly equal in size would prevent domination of the trade by a few large units.

Pressure for Economical Production and Sale

An allegedly important evil of monopoly is relative inefficiency in production and sale resulting from feeble pressure to minimize costs. This proposal should substantially increase pressure for cost reductions where production had been inefficient due to the monopolistic sense of security and ease and managerial "control" through control of the proxy machinery. By increasing owner control this plan should largely eliminate inefficient methods

[6] An arrangement fairly similar to the plan outlined here actually prevailed for a long time in the cane sugar refining industry. The California and Hawaiian Sugar Co. was composed of many independent raw sugar producers in Hawaii welded together in a refining coöperative. Individual producers sold their refined sugar independently (though under the same brand name) and from the same physical refineries. It is alleged that the individual producers competed as vigorously with one another as they did with other members of the industry. See Boris Emmett, *California and Hawaiian Sugar Refining Corporation of San Francisco, California* (Palo Alto, Stanford Univ. Press, 1928).

of production and sale. Stockholders who before the dissolution of the monopoly were too small to exercise control over its operations would after dissolution secure effective representation within their individual selling units. In voting their stock, the various owners of an individual selling unit could be expected to act in unison through a single representative who would serve as guardian of the selling unit's interests. These owner-representatives would presumably have no patience with inefficient or lax management of the "P.C.," for it would increase the selling units costs and compel them to maintain high selling prices.[7] More easily than they could guard against production inefficiency, the selling units could prevent management from overcompensating itself. Greater compensation for the executives of the "P.C." would mean smaller profits remaining for distribution to the selling units.

As outlined here, this plan should preserve the technological economies of large-scale production by maintaining the existing production structure. Similarly, managerial, purchasing, research, delivery and advertising economies[8] would be preserved by this plan. It would, however, increase selling costs somewhat as the number of independent selling units operating in the same market areas was multiplied. Competition requires many sellers and therefore imposes a charge in the form of duplicate facilities which partly offsets the price reductions afforded by competition.

The increase in selling costs resulting from this plan would, however, be small. Since almost all selling units would sell the identical product and receive no preference in delivery, rivalry among them would almost exclusively take the form of price competition. As in the case of purely competitive markets, distribution at the selling unit stage would be virtually costless. In order to ask minimum possible prices while obtaining a profit, selling units would presumably restrict their promotional activities to informing buyers of their existence and of the price at which they are willing to sell. They would await orders and keep records of their sales, payments received and debts outstanding. Any selling unit that engaged in costly high-pressure distribution would lose out to those whose restricted promotional activities permitted them to sell at the lowest price. Hence, though this plan calls for a duplication of selling facilities, by making the market almost purely competitive it keeps distribution costs to a bare minimum.

Moreover, this proposal could stimulate efficiency in selling by permitting easy entry of new sellers while preserving the threat of bankruptcy. Freedom

[7] Even though all selling units might be equally affected by inefficiencies so that no one suffered relative to the others, there are several factors that would cause the seller-owners to press for maximum production efficiency. First, they would often be competing with other sellers of the same product outside the dissolved monopoly. Second, they would be in competition with more distant substitute products. Third, they would probably feel that they could enlarge their total sales and profits by selling at a lower price. Fourth, they would probably be emotionally prejudiced against unnecessary waste and against paying high salaries to persons who did their jobs poorly. Owners of monopolies are also interested in these things. However, they are not able to exert strong influence on management because stock ownership is too widely diffused to allow owner control.

[8] Advertising of the *product,* even if private brands were used by individual selling units, would presumably be continued by the "P.C."

of entry could be facilitated by allowing new selling units to join the "P.C." by investing a sum fixed by the administrative agency. The new firm would be issued shares of stock of equivalent book value which would entitle it to a voice in the management of the producing unit.

Conversely, this plan allows for no slush fund that would cushion selling units from the full effects of competitive pressure. Whereas a monopoly might carry on wasteful selling methods which it financed from its monopoly profits, selling units which operated inefficiently would presumably be forced to leave the trade. Thus there is good reason to hope that the proposal would contribute to efficient selling and thereby compensate at least in part for the necessarily higher minimum costs of selling resulting from duplicated effort.

Industrial Situations to Which This Plan Is Adapted

Most amenable to monopoly dissolution are those firms which produce a single standard product. Multi-product producers, however, are susceptible to the same form of dissolution, but with much greater complication of detail.

In the event a multi-product firm was dissolved, each selling unit could be allowed to sell any or all of its various products. Selling units would share in the excess profits on the basis of their dollar sales volume. Problems would primarily arise around the allocation of joint costs among the individual products currently produced and in assigning costs to new products. Selling units would have an interest in being undercharged for the articles they sell in greatest volume and in being overcharged for the articles of which they sell the least.

Accounting convention would solve most of these problems. The flexibility of accounting procedures, however, makes it advisable to permit appeals to the administrative agency for a change in the method of calculation. After a short period, the rulings of the administrative agency would supplement accounting convention so that appeals would probably be infrequent.

In the case of new products, it would be best to allow only marginal (avoidable) costs to be charged against the new product. Otherwise, the combine might never produce and sell a product which would both cover its own costs and yield a profit to the selling unit which introduced it.

This plan could be applied to almost every large industrial corporation (monopoly or not) without danger of doing serious damage. Court dissolutions of the past often increased costs and were undertaken reluctantly. The plan presented here need not be used so sparingly. Of course the plan would hurt owners of monopolies. In the place of monopoly profits they would ultimately be limited to the profits of competitive industry. But this is no danger; it is one of the objectives of monopoly dissolution. A plan that is painless can only disguise monopoly while preserving it.

A partial and suggestive list of the industries to which this plan might be successfully applied follows: insurance (life, fire and casualty), steel, railroads, aluminum, sulphur, telephone, telegraph, oil refining, tobacco, sugar refining, radio broadcasting, electric power, automobile manufacturing, and metal and glass containers.

Alternative remedies for the monopoly problem rest upon the assumption that the number of producing firms and the number of independent sellers must be the same. Yet there are ordinarily many times as many sellers as there are producing units in virtually all of modern industry. The activities of the producing plants and salesmen are coördinated through accounting convention just as clocks, through the uniform measurement of time, integrate the activities of individuals. Presumably, costs would be calculated and allocated among various products in the same way after dissolution as before. The arbitrary and inexact elements need be no greater and uneconomical than they are now.

Thus, there are no apparent mechanical reasons why there cannot be many more sellers than producers. The task is to create a motivation which would induce sellers operating out of the same producing concern to compete vigorously among themselves. For this, too, there is precedent. Prior to the war it was not uncommon for automobile dealers selling the same brand of automobile to compete strongly for patronage and drive up trade-in allowances.

This proposal suggests one of many possible arrangements which offer hope of creating strong rivalry among sellers who own and operate the same source of supply. In the absence of experimentation with such arrangements, their consequences cannot be foretold with great confidence. With much greater confidence, one can decide whether this proposal deserves a trial.

This plan is advanced primarily for industries where only a few large concerns are currently operating and where economies of large scale make it costly to compel many firms to operate. Where monopoly stems from other causes, such as patents, specific cures might be preferable.

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Fetter on Lauderdale

Professor Fetter, in his discussion of "Lauderdale's Over-saving Theory"[1] considers it as the beginning of the general attack on classical doctrine which was carried on by Malthus, Hobson and Keynes. It should be noted, however, that, while the theories of Hobson and Keynes point to a program of reform, the early opponents of classical doctrine such as Lauderdale and Malthus were apprehensive of the social changes resulting from the industrial revolution. They defended the privileged position of the land-owning aristocracy against the attacks of the manufacturing classes and the social reformers who were demanding an end to the oppressive Corn Laws. Professor Fetter misses the drift of Lauderdale's work, especially with regard to the social perspective revealed by Lauderdale's policy proposals. Fetter argues (pp. 275-76) that Lauderdale's "motive" in writing the *Inquiry*[2] was to attack a debt reduction policy (the sinking fund) because he feared it would raise the price of public securities and lower the rate of interest. Lauderdale's "class-conscious sym-

[1] *Am. Econ. Rev.*, Vol. XXXV, No. 3 (June, 1945), pp. 263-83.

[2] *Inquiry into the Nature and Origin of Public Wealth* (1st ed., 1804; 2nd ed., 1819).

pathies" were with the investing class, Fetter claims, and thus he opposed the sinking fund which gave rise to a situation in which "rich investors are faced with the unpleasant necessity of reinvesting the proceeds of the redeemed bonds at a time when the interest rate on both public and private loans has fallen and, correspondingly, the price of securities of the same grade has risen above the call price of the old bonds issued under the stress of war" (p. 280).

This reasoning is based on a misconception of the English method of debt creation. The argument implies that during the war with France (1793-1802; 1803-1815) the government was forced to issue bonds bearing unusually high rates, and with the return of peace such bonds—having risen above par—would be the first to be redeemed. But this was not the situation. The customary procedure was followed of issuing bonds with a low nominal yield (3 per cent) and offering them to subscribers at prices substantially below par (in 1798 at half the par value). Refunding at a lower interest rate after the Peace of Amiens or the final peace in 1815 was, therefore, impossible as far as the bulk of the securities went, since over three-fourths of the war issues were in 3 per cents, and these never even approached par.[3] Certainly "war profiteers" would hardly have found it "painful" had the government after the war decided to call in at par consols selling in the market at £54. The sinking fund operated by purchases of bonds in the open market. There was no policy of purchasing bonds issued "under the stress of war" in preference to older issues, since bonds originally offered at various prices below par currently sold at prices proportional to their *nominal* rates of interest without reference to the real rates at which the money was first borrowed.

Lauderdale opposed the debt reduction policy because heavy taxes, which burdened the landed classes, were required to continue it. Coincident with the publication of the second edition of the *Inquiry,* he made a speech in Parliament indicating the basis of his opposition to the debt reduction policy: "The imposition of £3,000,000 of taxes, at the present moment, was an act of the grossest injustice. Granting that it was necessary to make a sinking fund of £5,000,000, was it not necessary to give the country a little respite from taxation? . . . The best way of arriving at a sinking fund with convenience to the country, was to allow taxation to relax for a moment, in order that it might attain that object."[4]

Lauderdale's attack on the sinking fund was not an isolated expression. It was part of a widespread agricultural agitation against taxation. This agitation came to a head in the depression of 1822. Meetings were organized, and petitions protesting the unabated payments to the fundholders and the "overwhelming and all-devouring taxation" were sent to Parliament.[5] Lauderdale's contribution to this campaign was a pamphlet entitled *Sinking Fund, or the system which recommends the repeal of five millions of taxes compared with the system which recommends levying five millions by taxation for the redemption of the public debt.*

The other major economic issue in which Lauderdale participated was the Corn Laws. Contrary to Fetter's assertion (p. 283 n.) that Lauderdale deplored trade restrictions, the record shows him to be an indefatigable cham-

pion of agricultural protectionism. He gave strong support to the restrictive Corn Bill of 1815, and to the end of his Parliamentary career he remained an uncompromising advocate of stringent prohibitions on grain imports.[6] Removing the Corn Laws, Lauderdale argued, would not mean free trade "while there were so many taxes which pressed on our agriculturists." It would, in effect, be giving a bounty to the foreign grower of grain. On the other hand, the corn regulations protected British agriculture from the ruinous effects of foreign surpluses, stimulated employment and demand, and made Britain independent of foreign powers for her subsistence. Such benefits transcended in importance the short-run gain derived from the importation of cheap corn.[7]

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"The Concept of Economic Surplus": Errata[1]

P. 851, line 12 from bottom: Insert *for the sellers* after *surplus.*
line 9 from bottom: Insert *for the buyers* after *surplus.*

P. 853, line 11: Replace *rent* by *surplus.*
Figure 1: Point N_1 and N_2, lying on the line NB_1 at the dotted lines, not marked.

P. 856, line 21: Replace r_0P_0 *by* r_0p_0.

P. 857, line 2: Replace $p'_2p_0p_6$ by $p'_2p_0p_4$.

P. 858, Figure 3b: s_t, lying at the intersection of s_2p_2 and p_1w_1, not marked.

P. 859, Interchange lines 14 and 29
line 23: Replace dash by minue, sign.

P. 860, line 9: Replace ot_1 *by* r_0r_1.
line 26: Replace $os_1p_1r_1$, which $r_0p_0q_1r_1$ —
by $r_0p_0q_1r_1 - r_0s_1p_1r_1$

P. 861, line 13: Delete *as in Figure 2,*
line 14: Replace *slopes* by *slope*

P. 862, line 4: Replace $p_1s_1n_1$ by $p'_1s'_1n_1$
line 7 from bottom: Delete dash

[3] The figures are derived from Robert Hamilton, *An Inquiry Concerning . . . the National Debt* (3rd ed., 1818), pp. 248-50. For the prices of consols see Leone Levi, *History of British Commerce* (2nd ed., 1880), table facing p. 72.

[4] Hansard's *Parl. Debates* (ser. 1), Vol. XL, p. 1232.

[5] William Smart, *Economic Annals of the Nineteenth Century* (London, 1917), Vol. II, pp. 57 *ff*. See also *Parl. Debates* (ser. 2), Vol. VI, pp. 555 *ff*.

[6] Lauderdale made a great many speeches on the Corn Laws between 1808 and 1828. See especially *Parl. Debates* (ser. 1), Vol. XXVIII, pp. 4-5, 59-60; Vol. XXX, pp. 142-43, 202-04; (ser. 2) Vol. XV, pp. 208-09, 1385-91.

[7] *Parl. Debates* (ser. 1), Vol. XXX, pp. 202-04.

[1] K. E. Boulding, *Am. Econ. Rev.*, Vol. XXV, No. 5 (Dec., 1945), pp. 851-69.

BOOK REVIEWS

Economic Theory; General Works

The Social Problems of an Industrial Civilization. By ELTON MAYO. (Boston: Div. of Research, Grad. School of Bus. Admin., Harvard Univ. 1945. Pp. xvii, 150. $2.50.)

To economists and especially to teachers of economics, this book will prove stimulating and at times shockingly irritating. With that portion of Professor Mayo's work which describes the difficulties of achieving effective coöperation in industry and advocates increased emphasis on the human factor, there must necessarily be definite agreement. In his discussion of these matters, Professor Mayo again proves himself not only an erudite scholar, but a down-to-earth philosopher with a sagacity founded upon his insistence on the utilization of objective clinical methods in studying industrial relations. On the other hand, with the thesis which apparently places the blame for both domestic and international ills largely upon the tenets of classical economic theory, there can be no meeting of the minds.

For the purposes of review, Professor Mayo's recent book may be divided into two almost independent sections. In fact, the author helps in that respect by designating Part I, Science and Society and Part II, The Clinical Approach. This latter part contains descriptions in considerable detail of three inquiries conducted by the Department of Industrial Research at the Harvard Business School, the first inquiry being on labor turnover in a textile mill, the second on the use of interviews at the Hawthorne works of the Western Electric Company, and the third on absenteeism and turnover in a number of metal-working plants. The material thus provides the reader with illustrations of the clinical approach to industrial problems and is also used by the author to substantiate his conclusions regarding the importance of social as contrasted with technical skills. Additional studies are briefly summarized in an appendix. In reading such studies there is sometimes the feeling that the same conclusions could be reached by deductive reasoning tempered with horse sense, but in a field of such transcendental importance as human relations, pains-taking scientific methods should be used to the maximum practicable extent.

In Part I Professor Mayo indulges himself in a criticism of social scientists and their works from Ricardo to the present. According to the author, economic theory is based on a misapprehension which can be traced to Ricardo, the basic concepts (p. 40) being:

1. Natural society consists of a horde of unorganized individuals.
2. Every individual acts in a manner calculated to secure his self-preservation or self-interest.

3. Every individual thinks logically, to the best of his ability, in the service of this aim.

With these, Professor Mayo disagrees except under conditions of emergency or crisis when routines of coördination in a social group are broken, and he points to such motives as "desire to stand well with one's fellows, the so-called human instinct of association" (p. 43) as more important than self-interest and logical reasoning.

Without defending Ricardo whose own early retirement from stockbroking might be used to refute the power of self-interest, it should be pointed out that economists, both old and new, have repeatedly emphasized other types of motivation. It is not surprising that Professor Mayo finds a worker who refused to accept a new job at an increased salary when such reward meant leaving a congenial working group. Economic society weighs monetary rewards against working conditions, including surroundings and co-workers, and economists have long used the familiar term "psychic income" to cover various forms of non-monetary compensation. But economists still insist that individual self-interest is the dominant industrial fact, although they would not necessarily hold that such a dominance was best for an ideal society. Moreover, in regard to another aspect of economics, the author's statement, "scarcity of a necessary commodity is emergency or crisis" (p. 41), cannot be accepted as valid for this world in which economists must base their analyses on the prudential allocation of scarce means of production.

In his attack on the social sciences which are characterized as "the unsuccessful sciences," Professor Mayo is on firmer and relatively well-trodden ground. The natural sciences—chemistry, physics, physiology—have made miraculous advances and with them man's technical dexterity in handling things, while there has been no comparable progress in social skill which, in the author's words, "shows itself as a capacity to receive communication from others, and to respond to the attitudes and ideas of others in such fashion as to promote congenial participation in a common task" (p. 13). Admitting these points and in no way wishing to present an alibi for society's failure to develop adequate social skills, the reviewer feels that the reason lies in basic differences between things and beings, differences aggravated in an age of unusually rapid technical development. And the reviewer also questions the complete validity of the author's assumptions of earlier and simpler orders where technical and social skills were in balance. Even in such societies which Professor Mayo considers "established" in contrast to the present "adaptive" one, social skills lagged and the happy savage remains a mythical creature.

The most extensive and important application of Professor Mayo's thesis must now be considered, namely, the international one. The author states: "If our social skills had advanced step by step with our technical skills, there would not have been another European war" (p. 23); a theme which recurs in various places, including the final lines of the last chapter. In this disheartening post-war period there can be no one who does not fervently wish this were true, but proof is impossible. In the reviewer's opinion, Hitler was a consummate master of social skill and it is dubious if any opposing social skills could have deterred him and his followers from their mania for world

domination. Furthermore, it should be pointed out that economic theory in Germany was not of the classical British variety and also that the four horsemen have ravaged the world from times immemorial. The reviewer believes that it will require more than a reform of Ricardian theory to reach the new era of peaceful understanding. It will require the reform of the human heart.

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Le Développement de la Pensée Économique. By BERTRAND NOGARO. (Paris: Lib. Gén. de Droit et de Jurisprudence. 1944. Pp. 345.)

This book, written in the darkness of the occupation, is symptomatic of the old, not of the new, French economic approach. It is perhaps the last of the histories of thought published by a member of the school of writers made famous by Gide, Rist and Gonnard. Professor Nogaro makes no claim to originality and does not specialize in historical background work in which Gide and Rist, and more recently, Paul Hugon,[1] a French professor in Brazil, excelled. Nogaro presents a chronological survey of outstanding contributions to economics with particular emphasis on the nineteenth century.

The book starts with Cantillon, Quesnay and the Physiocrats, Turgot, Hume and Condillac, a group of authors who, as Nogaro puts it, studied the *ensemble* of economic organization. This first chapter on the *précurseurs* is clear, precise and makes easy reading. The three chapters following deal with the great classics, Adam Smith, J.-B. Say, David Ricardo and John Stuart Mill. They are written in the French textbook tradition, presenting collated excerpts in digest form, interspersed with comments.

Chapter 5 on Historism and Realism in the Nineteenth Century includes a comparative analysis of Schmoller and Wagner. However, casual reading might convey the erroneous impression that Adolf Wagner was a member of the historical school. In connection with discussions of the historical approach, if not with regard to other features of economic analysis, French economists have given rather extensive, though rarely sympathetic, treatment of Karl Marx. In this respect Nogaro's treatise differs from the traditional French histories of economic thought. He completely omits the treatment of Marx and Marxians. Omission of the more recent writings of Dickinson, Lange and Lerner can partly be attributed to a time lag in international intellectual osmosis which, however, does not apply to earlier socialist writings. Nogaro justifies omission of Marx by stating that dogmatic tendencies are excluded from this book. Was it the political condition of the time during which he was working on the book which forced this approach upon Nogaro, or does he really think that Marx had only dogmatic and no analytical contributions to make? In any case, economic analysis of the problems of a collectivist system seems to be beyond the pale as far as this author is concerned.

The chapter on The School of Vienna and Marginalism brings some good,

[1] *Elementos de Historia das Doutrinas Econômicas* (São Paulo, 1942).

although well-known, comments on Menger. It leans particularly on the writings of the recently deceased Gaëtan Pirou, author of *Les Théories de L'Équilibre Économique* and of *L'Utilité Marginale de Ménegr à Clark.*

The next chapter is entitled The School of Lausanne and Economic Equilibrium. There are generous samples of Léon Walras's value analysis and there is no doubt that Professor Nogaro has given serious attention to this author. Pareto is given a prominent place but unfortunately he is primarily described as a popularizer of Walras, and not enough credit is given to his creative rôle as a successor. The work of Cournot receives even less attention in Nogaro's work than it was given by Gide and Rist. The explanation offered by the author is that Cournot had little influence on economists of his time. Since Nogaro does not deal with imperfect competition, the rôle of Cournot as a pioneer in the study of the theory of monopoly is not given justice. Barone seems to have been forgotten altogether and this is another indication of Nogaro's underestimation of achievements of the Lausanne school beyond the accomplishments of Walras.

A chapter on Neo-Classicism is largely devoted to Alfred Marshall and to John Bates Clark. There are several quotations and condensations from Professor Homan's *Contemporary Economic Thought,* particularly in the section dealing with Clark. Both Clark and Marshall are treated quite interestingly, and in the case of Marshall the various intellectual influences and cross currents are painted in a few bold strokes.

The chapter on Tendencies of Contemporary Economic Thought includes references to Mitchell and Spiethoff, Veblen and Commons, Simiand and a number of other writers. Among the more recent French economists, the professors of the Law School of Paris, Aftalion and Lescure, get their share of recognition, while for instance, René Roy, mathematical economist of a French engineering school, joins Barone in the ranks of forgotten men. This can be understood by Nogaro's attitude toward mathematical analysis in general.

Nogaro believes that our generation is one of eclectics in the field of economic thought and, indeed, from his perspective, eclecticism is all that can be seen, for most of the significant works written since the early thirties are not considered. Of Keynes he says only that "He uses with equal mastery statistical documentation and deductive reasoning," a compliment which Lord Keynes might have thought too much on one and too little on the other hand. Of Hicks, there is no mention, but then, *Value and Capital* was published in 1939 and because of war conditions, Nogaro may not have had an occasion to see it before his book was printed.

The last chapter, The Conflict of Methods is a swan song of an epoch. It is a plea for scientific analysis based on logical deduction and empirical investigation, but a rejection of abstract models and theories, particularly of the mathematical variety.

Nogaro is an erudite more than he is an analyst. He has given training in classical economics to thousands of students, but some of his pupils went abroad and came home with new ideas. His students will challenge Nogaro

as he challenged his elders when he talked to them about the teachings of Marshall, Clark and Mitchell. He will find discussions with the new generation quite stimulating. The conflict of methods will be evident.

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Economic Systems; Post-War Planning

The Great Transformation. By KARL POLANYI. Introduction by ROBERT M. MACIVER. (New York: Farrar and Rinehart. 1944. Pp. xiii, 305. $3.00.)

Dr. Polanyi has offered in this work an explanation of the present difficulties of Western European civilization. With an historical review that is almost wholly confined to England, he finds his answer in an asserted incompatibility between modern industrial society and the instabilities invoked by the capitalistic market system. We are in the midst of a conflict between two major idea-systems, conscious regulation of economic activity and the principle of self-regulating competition. As Polanyi views matters, free competition has always been a disorganizing influence, which has consistently invited organized interference to protect the very existence of society itself. Our present extensive departure ("the great transformation") from the individualism of the nineteenth century was not the result of ". . . some alleged laws of economics such as that of the falling rate of profit or of under-consumption or over-production. [That society] . . .. disintegrated as the result of . . . the measures which society adopted in order not to be, in its turn, annihilated by the action of the self-regulating market" (p. 249). Thus the Marxian thesis is summarily rejected, although in the spirit of Marx, Polanyi turns Professor Schumpeter upside down, since the latter holds that capitalism could survive *if* freed from "irrational" interferences, while Polanyi finds this a formula for destruction.

Economists, then, should cease to recommend a policy of free markets, and should get away from an artificial separation of the economic community from the remainder of culture. They should recognize the soundness of the efforts of articulate social groups to protect their positions from the incursions of market forces. Society has been "rediscovered," and those who make policies should get away from the notion of autonomous economic laws. Society is "complex" and "integrated," and the very concept of individual freedom may well be an illusion.

We are not told, however, how, in this new view of things, economic resources are to be allocated among competing uses. It is implied that the state, through the executive power and social legislation, is to control economic processes for the protection of "all." We are encouraged to believe that group struggles for economic advantage have their common ground in "social protection," and apparently need give no cause for concern. But the author gives us no specific political theory. One can envisage a "broker state" which is to distribute "equities" according to relative group power, imposing the

results upon an attenuated price and profits system (with the magnificent inconsistency that is now helping inflation along in this country?). Or, one can contemplate a thoroughgoing political absolutism, modern style, dominated by the minority representatives of a single group (similarly threatened with inflationary destruction of the total plan, and compelled to follow drastic authoritarian measures). But such speculation is left to the reader, for after furnishing an engaging defense of Interventionism in its many forms, Dr. Polanyi comes to no concrete results for present economic policy. Yet from the economic side of Interventionism, the solution to the problem of allocation and full resource utilization constitutes a major challenge to all partisans of increased control.

We may turn to a more detailed consideration of the argument. The point of departure is an evaluation of economic liberalism as a philosophy of social change. The proponents of this doctrine took it for an automatic principle, indispensable to a stable social order. The principle of competition as an ordering force had its inception, it may be noted, in the effort beginning with Hobbes in the seventeenth century to construct a social physics of the individual units of "human nature," which were taken to move according to simple mechanical laws, discoverable by reason. A century later, Smith and Quesnay had constructed a complete theoretical depiction of the natural order which would emerge from the free play of economic individuals in motion.

In this manner the *individual* became the primary conceptual unit in a theory of social policy. Sanction in turn was provided for a dual attack upon feudal and mercantile practices, and for a policy of *laissez-faire*. The nineteenth century was the high period for this system. Since 1914 these ideas have been obsolete, in the opinion of the author, and must give way to increased control. Any effort to sustain the free market economy is, in consequence, hopelessly utopian, since it represents an intellectual response to historical conditions no longer in existence. Society cannot, in these times, withstand the disintegrating atomization essential to letting individuals freely pursue their own interests.

This "social atomization" implicit to *laissez-faire* from the beginning involved the denial and destruction of society itself. It was in no sense the natural outcome of an ineluctable principle of truck, barter and exchange; it had to be imposed, by the destruction of existing social arrangements. Thus the commercialization of agriculture required the deliberate destruction of the medieval village community, and the whole feudal apparatus for controlling the unstabilizing effects of changes in long-distance trade. Even the Mercantilists aimed to protect the community and its established social groups from the disorganizing impacts of the free market. The conversion of human labor to the status of an economic commodity, initiated with the Act of Settlement in 1795, was checked by the Speenhamland poor relief system until 1834. In short, the introduction of economic liberalism was never a "natural development," but part of a conscious program which throughout met with opposition expressed in measures of social protection.

Laissez-faire involved intervention. It offered an enticing argument, by

geometrical demonstration, for social order. Actually, it created disorder. Resistance to the free market system was the response, to preserve order. This is true, the author finds, of the feudal regulations, the mercantile system, and the Speenhamland policy. It is also true of the "protective" efforts of interest groups down to the present time. Resistance to change has always been more natural to men than any impulse for free trade.

The repeal of the Speenhamland law in 1834 gave England free wage labor, by a measure whose "ruthless scientific cruelty" derived its intellectual justification from the classical political economy. The author is thus drawn to a reëxamination of the conceptual foundations of economic liberalism.

At the end of the eighteenth century, Godwin had attributed poverty to imperfect social institutions. Man himself was perfectible; all that was needed was to reconstruct society according to the principles of reason. As is already well known, this furnishes Malthus with the inspiration for his doctrine of population. Hunger alone could goad the poor to work, for men were beasts who would naturally reproduce their kind faster than food supply could increase. Nature ordained a balance of forces, physiological and environmental, in this zoölogical determinism. The concept, in turn, of struggle for existence, later entered biological thought in the work of Charles Darwin.

Ricardo built his own conceptual structure with these materials. He reaffirmed the artificial distinction between the economic and the social order. The economy had its own autonomous laws; they were independent, in the long run, of political action, and in the large were a part of the very order of nature itself. Only work and production could ameliorate poverty, and work required the spur of hunger. So emerged the basis for an attack on the poor relief policy.

The explanation for this wrong-headed doctrine is to be found, Polanyi believes, in the notion of "human nature." Men were taken to be individual economic atoms, driven by self-interest; under competition they serve society, and a harmonious social order is the logically necessary result. Mandeville foresaw the essentials of the argument in 1709. As a matter of policy, what was required was the elimination of interferences with free exchange, in all markets. The aim was the complete mobility of economic resources, irrespective of social costs. All of the theorems of this social "geometry" flow back to the principle of human nature.

But when Polanyi considers the data of history and the findings of cultural anthropology, he is convinced that the classical belief in an abstract human nature and its derivative institutional nexus is quite without foundation. Man actually prefers the stability of existing institutional arrangements, as the lengthy history of measures of social protection clearly shows. For most cultures, economic activity is not induced by an acquisitive "instinct." And save for the nineteenth century, economic activity is not conventionally separated in fact from the remainder of human activities. On the contrary, the procurement of economic commodities, with the exception of the market economies of private capitalism, traditionally has been organized under the social principles of reciprocity (mutual exchange between specialized groups), or redistribution (allocation of surpluses by an accepted authority), or

householding (direct production for use). Only under industrial capitalism has the principle of private gain-seeking been utilized as a means for the solution of the economic problem. This ignores, it may be mentioned, the indispensable activities of the trading class of the ancient Mediterranean world.

In his critique of classical economic theory, it will be observed that the author has revived Veblen's technique of "inverse normalization." The acquisitive principle is not normal; the free market is not normal; and the "policeman" state is not normal. Each was the artificial result of deliberate intervention. And the resistances to the policy ("frictions") are normal; they express man's natural resistance to the disorganizing effects of the free market.

Now in conjunction with this critique, it may be remarked, although the matter is not developed by Polanyi, that the attempt to explain the behavior of men by reference to an ultimate set of constants designated as human nature had its inception in the seventeenth century, in the work of Grotius and Hobbes. Under the influence of the mechanical physics of Kepler and Galileo, the attempt was made to reduce human behavior, by analysis, to its simplest elements, the "laws of human motion." From these axioms, a deductive synthesis could then be built up by syllogistic reasoning, to yield a theory of the state, society and the social order. For Hobbes, the basic "law" is self-preservation, from which he derived a theory of political absolutism. For Adam Smith, a little over a century later, the basic principle is rational self-interest, from which he derived the logical necessity for the liberal state and the institutions of the free competitive market. These rules of social life were true for all time, universal in application, because their underlying premises were intuitively true to human reason. The science of man was placed on a footing with the timeless laws of mechanical physics.

In rejecting this concept of human nature, Polanyi offers us another: that man naturally resists change and prefers the stability of existing ways of life. But whether one argues that man naturally acts in self-interest or that he naturally acts to maintain his status in a social system, the assumption is retained that there is a datum to history, human nature. And if one takes Polanyi's definition of the datum, he is once obliged to explain the manifold changes which have occurred to the institutions of a particular people in historical time, and at the same time to account for the impressive variety in social institutions which becomes obvious when the cultures of different peoples are compared. Neither the historical innovations in culture nor the differences in culture can be accounted for by reference to abstract and timeless constants. And this is to say nothing of the difficulty, in the light of recent investigations, of defining "the nature of human nature" itself. Psychologists have found it increasingly difficult to analyze out learned traits in order to obtain a residuum of "innate" tendencies. About all that can be said is that the formerly impressive apparatus of "propensities," "instincts," and "drives" has quite disintegrated as a means for the explanation of the behavior of men in actual historical situations.

It may be contended, therefore, that uniformities in human behavior can

only be discovered by the study of the actual behavior of men in historical time, and not by the traditional procedure of "peeling away" learned traits, by abstraction, in order to find simple principles intuitively known to be true constants. Only in this way can empirical knowledge be gained of modalities (institutional resistances to change) and of the conditions of innovation in institutions. These observations are equally applicable to Dr. Polanyi and Adam Smith.

The upshot of Polanyi's inverse normalization is to turn the classical constructs upside down. The result is a new concept of economic and social rationality. It is rational for the state to intervene in every department of the individual's life. It is rational for men to ally themselves with "like members" in groups, and through such groups to press for exclusive advantages. As Veblen would have said, "This is as it should be." On the other hand, it is irrational to recommend free markets, free private enterprise—the "simple and obvious system of natural liberty." Such views can only rest upon the denial of the reality of society itself.

In this manner, classical English liberalism gives way to a continental theory of Statecraft and an accompanying sociological doctrine. Viewed in the large, the conflict between these two modes of thought acutely expresses the division in ideas which now prevails in the United States, in the conflict over the relation of the state to economic life. It may be remarked in passing that the ideas of Interventionism were introduced to the social disciplines in the United States largely by scholars who undertook their graduate studies in Germany, in the second half of the nineteenth century.

Having rejected the classical system of thought, Dr. Polanyi finds himself obliged to account for its favorable reception and undoubted success in the nineteenth century. Once more the discussion is confined largely to England, possibly because *laissez-faire* never enjoyed equivalent acceptance in Germany and other parts of the Continent. The author views the eighty years which followed 1834 as a period of peace, expanding markets, active capital accumulation, and a rising standard of life. He accounts for these matters by contending that there then obtained a unique combination of historical circumstances: the self-regulating market, the gold standard, the *laissez-faire* state, and above all the peace interest of an expanding business civilization. The practical pacifism of business was given political expression by Metternich's arrangements in 1820, and by the later Concert of Europe. Lenin to the contrary, capital was bound to lose in a general war in Europe, and so confined major military operations to the conquest of colonial areas.

Why, then, did 1914 occur? Because, it is asserted, colonial rivalries intensified after 1900, dividing Europe into armed camps. In addition, further interventions into the market process rendered the system increasingly unworkable. Among these influences are mentioned tariffs, trade unionism, social legislation, monetary experiments, and monopoly groupings of business interests. Intervention tends to become cumulative, as the older free system bogs down in increased difficulties; hence the period from 1914 has involved the half-conscious "great transformation" of liberal society.

The persistence of the classical doctrines, as a theory of policy, in the

disorganized twenties and thirties, rendered a frank facing of the actual difficulties impossible, and left governments with inconsistent and badly formulated programs. In this context of intellectual confusion and continuing disorder, fascism became possible, the author says, as a spurious doctrine of order and stability. On the other hand, the classical liberals continued to give utterance, like the Scholastics of another age, to sterile but dogmatic formulas. Each new piece of intervention was interpreted as part of a grand collectivist conspiracy. Yet, Polanyi believes, interventions by the state or directly by private groups seeking special protections have never proceeded from a common ideology. They are to be interpreted as pragmatic responses to particular historical situations (the doctrine that ideas are plans of action formulated solely as responses to given stimuli, a quite erroneous view in the opinion of the reviewer). The classical liberals have always erred in railing against an imagined conspiracy of agrarians, protectionist manufacturers and trade unionists. So too have the Marxists made the mistake of identifying measures of intervention with the promotion of the interests of the dominant class. Acually, Polanyi contends, classes are not primarily economic but social. They are themselves the derivative products of a social structure which undergoes historical changes. Classes may be the carriers of such processes of change, but they are not causal factors in history.

Both the classical liberals and the (classical) Marxists wrongly, Polanyi argues, look askance at most of the activities of groups and classes. Such ideologues proceed from a selfish theory of human nature, are inclined to view special protective measures as irrational in the large, and are unable to recognize that groups and classes can and do take a "community view."

Perhaps they do, in some cases, and the author has at least given such activities a rather neat sociological justification which in some respects constitutes an improvement upon Machiavelli's selfish theory of human nature. But Machiavelli also studied history and his conclusions arose more from describing men as he actually found them (and not idealizing them) than from a conscious effort to "de-spiritualize" human beings. The present difficulties, in reconciling interest-groupings with the "community interest" in stabilizing the price system, hardly lends comfort to an unrestrained optimism of the sort Polanyi conveys.

Criticism of a book of this character must necessarily be limited. The work offers an interesting interpretation of the economic history of England and an intriguing critique of classical economic liberalism. As a contribution to the problems of economic policy in the present and for the calculable future, it offers scarcely more than an appeal for tolerance toward interventionism, and a disparagement of objections to such policies where founded upon liberal concepts of the state or consideration of the economics of relative cost and substitution.

The aim, apparently, is to restate the case for intervention in order to make professionals more receptive to the economic actions of autonomous economic groups and the political state. This suggests that a stable social order can only come from more intervention, and that it must come with such intervention. Now this is an assumption which can be made, and with force; but

it remains an hypothesis. The history of countless states and their failures in the past offers no more warrant for optimism in this quarter than for the confident naturalism of the Classical School. Until we know more about the factors in historical changes, we shall remain in the dark, with either policy.

In his denial of the possibility of making the classical separation between the economic and the social order, the author accomplishes a shift of emphasis which serves the dual purpose of an attack on economic liberalism and a defense of intervention in its manifold forms. It should be pointed out, however, that the Classical School itself was genuinely devoted to the maintenance of the social institutions to which it was devoted. Social stability in some context is the actual objective of all schools in the social sciences, notwithstanding verbal enthusiasm for Progress. And this objective is a response to the very real yearnings of Western man himself.

On the other hand, when the problem of policy is limited to this conception, sight is lost of the economic side of the matter. There *is* a problem of resource allocation and there *is* a problem of resource utilization. The solution which one recommends for these complex problems of a collective economic existence will determine, if it does not proceed from, the scheme of social and political institutions which the policy-maker wishes to make permanent. This is not to say that society is "nothing but" a scheme for efficient economic production. We suffer from an excess of such implicit theorizing today. But it is to contend that the economic side of the matter is not to be dismissed as an obsolete remnant of classical doctrine. As a matter of fact, the enthusiasm of the author for groups, the state, and intervention in general might well be tempered with a consideration of the economic factor.

Another consequence of Polanyi's position is the suggestion that freedom may be an illusion, that increased "integration" of man in "society" is in prospect, and that freedom may be a temptation to destroy society itself. These rather vague generalizations can provide justification for virtually any brand of political absolutism. Nor has the author considered that if unlimited "sovereignty" is to be conferred upon private economic groups to pursue (their) "social protection," the result can well be a condition of disorder which directly invites a totalitarian state. In the first place, the democratic theory rests upon the sound premise that minority groups have obligations and responsibilities to the majority, as well as rights for the orderly pursuit of private advantages. In the second place, consideration ought to be given, in a book of this character, to the assumptions and implications of political totalitaranism. Unless history is viewed as necessary grinding out an inexorable trend, men do have a choice in these matters. The civilization of Western Europe involves more than a system of impersonal markets. What are the effects upon the life of the single individual and his social existence if the state is given complete centralized power to make economic decisions? The principles in the American Bill of Rights involve something else than a guarantee of free private enterprise. What happens to these principles when a small group is entrusted, in its wisdom and without responsibility to a free ballot, to *control* change and to *administer* social order by the police power? These are more than matters of the free exercise of the acquisitive principle,

and they are more tangible than an "illusion" when one compares the political experiments of the past thirty years.

A final observation may be made about the author's interpretation of the nineteenth century. Stress is placed upon the driving stimulus of the free market. Matters would, in my judgment, have been made more concrete by reference to the secular stimulus of a high rate of capital formation. Traditionally, this has been the driving force of the capitalistic system, offsetting over the long run the over-savings tendency. The explanation of the phenomenal capital development of the nineteenth century is to be found in an interdependent combination of four stimuli: territorial growth, the discovery and utilization of new natural resources, the increase of population (about 2.5 times in Europe from 1800 to 1914), and technological change. This lay back of the successful filling of the vents offered by free markets.

The book is excellent in its examination of the classical doctrines and in the author's assessment of the historical significance of Speenhamland. It offers an engaging reinterpretation of Interventionism, and an admirably sympathetic effort to evaluate past measures of social protection that economists have been too ready to dismiss on highly theoretical grounds. For these reasons, the book should be given an important place in the reading of all students of policy problems.

GEORGE H. HILDEBRAND, JR.

University of Texas

Planning for Jobs. Edited by LYLE FITCH and HORACE TAYLOR. (Philadelphia: Blakiston. 1946. Pp. x, 463. $3.75.)

In the years immediately preceding World War II, it was becoming increasingly clear that a radical reordering of the workings of our economy was necessary if we were finally to pull out of the chronic depression then plaguing this country, and if we were to avoid falling into such a depression in the future. Over a period of well-nigh ten years we had tried now this and now that measure to raise production and employment to normal levels, only to slide back into the quicksand of a new depression. We were obviously failing to get down to root causes.

The demands of war gave rise to full capacity production and full employment, but quite clearly did not eliminate the problem left unsolved when the war began. When peace came, the country would still need to find an answer to the question of how to operate the economy so as to provide continuous *peacetime* employment for all Americans able and willing to work for a living.

In the winter of 1943-1944, this question was dramatically put before the American public when the Pabst Brewing Company offered $50,000 in prizes for the seventeen "best and most practical solutions to the broad problems of postwar employment in the United States." The contest aroused nationwide interest. Nearly 36,000 Americans submitted plans. Men and women of all walks of life, including about 5,000 from the armed forces, participated.

The great variety of American thinking on so vital a question as post-war employment, which this nation-wide response undoubtedly reflected, was not

however, made available to the public at the time. Only the 17 winning plans were published[1] and none of the supporting material.

The volume under review aims to fill that gap. Professors Fitch and Taylor have edited and annotated approximately 200 of the proposals, selected to represent as many points of view as possible, "especially in the case of controversial questions." The excerpts included in the publication were taken from both plans and supporting materials of over 160 entrants, including seven of the prize winners. The editors have thus enabled us to examine and evaluate not only considerable amounts of supporting material, none of which was published before, but also a much larger sample of the plans.

In addition to these excerpts, the editors present a tabulation of the opinions of over 9,000 of the contestants on a number of selected aspects of the employment questions.

As would be expected, the variety and diversity of the proposals are almost bewildering. They run the gamut from the highly ingenious and complex plan of a Washington, D.C., economist to maintain full employment through a system of forward agreements between government and prospective purchasers, and the simple, unicellular proposal of a Manpower Commission director from Nebraska for weed eradication, as a way out of depressions. If it were not for the logical grouping of the selections by the editors, and their terse and lucid summations and annotations, it would not be possible to see the forest for the trees. With the editors as expert guides, one emerges with a more or less clearly defined pattern of American thinking on the question of post-war employment, as it was put down on paper in the Winter of 1943-44.

In general, the 200 proposals reproduced here do not differ greatly from the proposals of the 17 winning essays. Essentially, they merely constitute a larger variety of themes which derive from three basic assumptions that run through all the 36,000 plans, the 17 included.[2] All but a few of the authors who expressed themselves clearly on the subject would have government lead us out of depressions and create conditions for full employment. Of those who look to the government as that instrumentality, the majority would have it exercise these functions through its taxing power or through investment aids and monetary reforms. A basic assumption running through all the plans is that "practical solutions" of the unemployment problem can be effected within the framework of an economic system of free private enterprise without seriously compromising existing prerogatives which are exercised in the control of that system.

The result, in general, is a superficial evaluation of the causes of economic crises and of possible measures for their eradication. Most of the plans, at best, are ameliorative, rather than preventive. Many become seriously involved in self-contradiction, and still others would lead to the perpetuation, if not the aggravation, of the causes that make for crises.

[1] They were published in the Summer of 1944 by the Pabst Brewing Company as a pamphlet entitled, *The Winning Plans in the Pabst Postwar Employment Awards.*

[2] An excellent summary of the 17 winning essays was published in the *American Economic Review* by E. B. Smulyan in March, 1945. (See Volume XXXV, No. 1, pp. 120-127.)

Most of the authors who expect the government to save us from our folly seem to conceive of government as some kind of supernational being, possessing unique powers and qualities to sustain the economy—rather than as one of the many institutions created by the economy, and living within and sustained by it. For government to be able to exercise powers toward eliminating depression unemployment, the economy itself must first be so reoriented that depressions become impossible. Without provision for such reorientation, the plans remain sterile, can do no more than attack symptoms, and create a *deus ex machina* to do the attacking.

A few of the plans, the reviewer's among them, go so far as proposing a rechannelizing of the nation's income, so that less would flow into savings and more into consumer purchasing power, as a means of assuring full peacetime employment. That would be accomplished through reducing taxes on consumption and increasing taxes on personal income, and/or through increasing wages and lowering prices commensurate with increased productivity of industry. Some of these plans would vary the tax burdens between different income classes as required by the swings of the business cycle.

But most of the authors deny the need of any basic changes in the economy and many assume the certainty of peacetime full employment if only the government "create a favorable environment" for business (a new catchword in economic theory). By "favorable environment," or favorable business "climate" as some prefer to phrase the new slogan, they mean that the government provide "incentives" to business and remove its "restraints." Among specific "incentives," they would have the government reduce the corporation income tax, lower tax rates on the higher income brackets, abolish the excess profits tax—just as it was before we were catapulted into the abyss in 1929-32.

Implicit in most of the plans, but explicit in quite a few, is the acceptance of the inevitability of business cycles. *When the depression* comes, these authors seem to say, do this or do that to ameliorate its effects. The Washington, D.C., economist[3] who proposes to stabilize business through the plan involving a system of forward agreements with prospective purchasers, includes a provision for "Slack Period Reserve Agreements." It is even more explicitly stated in the very comprehensive plan of a Princeton University economist which provides for both monetary stabilization and guaranteed markets for industrial output as a means of assuring post-war employment. *"Whenever depression threatened,"* he states, "there would be a ready market." And again, *"on the appearance of the depression* the Corporation will take over. . . . The Corporation's purchases are conditional on the undertaking of the manufacturer to repossess the goods, *as soon as private demand revives. . . .*" (All italics are the reviewer's.)

The attempt to find ways of controlling the business cycle, yet operate within it, leads many of the authors into curious *culs-de-sac.* An economics professor from Washington, D.C., in a "one-sentence" plan would have "Uncle Sam" buy up all consumer goods which the normal market will not

[3] This is the manner in which the editors identify the authors of the excerpts cited; an appendix lists their names.

absorb, and dispose of the surplus "by holding it as a temporary stockpile . . . or by distributing it to domestic welfare agencies for sale at a discount; or by selling it to foreign governments; or for that matter, by giving it to the Chinese as a means of advertising American goods"! It never seems to occur to the author that his surplus disposal schemes would undermine the very market his plan aimed to sustain. And "Uncle Sam" would be left holding the bag.

The essays were short essays and one could not, therefore, reasonably expect that the authors could give a complete or rounded view of their thought. The impression left in the mind is not, however, a very satisfactory one. It reminds one a little too much of the six blind men of Indostan who went to "see" an elephant.

JOSEPH M. GILLMAN

Washington, D.C.

Problems of the Postwar World. Edited by THOMAS T. C. MCCORMICK. (New York: McGraw-Hill. 1945. Pp. viii, 526. $3.75.)

Most of the contributors to this symposium are faculty members of the Division of Social Studies, University of Wisconsin. The volume thus represents the thinking on post-war problems by a substantial number of the social scientists at one of our better known universities. The book, which is divided into three parts, covers a wide range of broad subjects in the general fields of economics, government, and international relations. It is addressed to the "educated and thoughtful layman."

Part I is entitled Economic Policy. Walter A. Morton's paper on Income and Employment discusses, in the space of thirty pages, reconversion, income and employment levels, causes of fluctuations, consumption, savings, private and public investment, monopoly and price policy, the national debt, fiscal policy and full employment, and economic maturity or excessive savings. Perhaps because of the numerous topics covered in so short a space the chapter presents little description, explanation or analysis. It lacks integration and is replete with unsupported generalized conclusions. This essay will contribute little to the layman's understanding of the problem. Selig Perlman's and William H. Knowles's chapter on American Unionism in the Postwar World is also disappointing. It is questionable whether this contribution will aid the layman in understanding labor problems or assist him in evaluating and selecting sound labor policies or electing public officials who will resolve labor problems most satisfactorily. The reader is entitled to expect a far more enlightening discussion from one of the nation's outstanding authorities on this subject.

Elizabeth Brandeis has contributed a refreshing and provocative paper on social security. Whether or not one endorses the author's approval of the "Wisconsin Plan" and "merit rating," one must respect her originality of ideas and clear, logical and objective presentation. Asher Hobson has written a creditable chapter on post-war problems and planning in agriculture. The author has included considerable historical and some analytical material on

government participation in agricultural affairs. In a chapter on post-war problems and policies much of the historical information might preferably have been omitted and the space devoted to current agricultural questions and suggested solutions.

Harold M. Groves's chapter on Taxation After the War is primarily a condensation of *Production, Jobs and Taxes,* which he prepared for the Committee for Economic Development, and *Federal, State and Local Government Fiscal Relations* (S. Doc. No. 93, 1943) in the preparation of which he was Chief of Staff. Paul T. Ellsworth has done a workmanlike job on the Bases of Economic Foreign Policy. The many interdependent problems are clearly stated, the space allowed each is well balanced, and the reasoning is cogent.

Part II is entitled Government and Society. In the paper on the Planning Process in Government, John M. Gaus discusses the meaning, difficulty, and importance of planning. He defines planning as "a process of preparing wiser decisions." David Fellman, writing on Post-war American Federalism points out that the relationship between the federal and state governments is an integral part of our constitutional system; and the problems growing out of it cannot be settled with finality because economic and political development continuously create new sets of issues. Lorentz H. Adolfson discusses problems, trends, and the future of local government. In a paper on Post-war Education, Matthew H. Willing describes pre-war trends in education and the effect of the war upon the schools. He concludes with a discussion on education in the post-war period in which he predicts a great demand for economic, scientific and technical training. There is little or no discussion of adult education or school finance. The editor of the volume, Thomas T. C. McCormick, is also the author of a thoughtful chapter on the Negro. Important as this subject is, its inclusion with essays on planning, government and education seems out of place. Since the plan of the volume is to cover a wide range of problems, it might have been desirable to have included at this point a few papers on important "war-created" problems; *e.g.*, price control, housing and veteran benefits, which continue in the post-war period.

Part III deals with International Relations. Harold W. Stoke contributes a challenging paper on the New Nationalism in which he maintains that the interests and forces making for strong national states overwhelm the interests and forces making for collective security. For this reason and in order for this government to fulfill its commitments the author advocates the maintenance of a large peacetime military and naval force and the conservation of our natural resources. Pitman B. Potter's provocative article on The League, a League, or What? indicates certain essentials necessary for the effective international coöperation. He believes that the failure of the League of Nations was due chiefly to its members' failure to make use of it. He concludes with a convincing plea for an effective world organization.

The remaining papers, which are not of primary concern to economists, may be merely listed: American-British Relations by H. Donaldson Jordon; Russian-American Relations by Selig Perlman; The Peoples of Germany by Howard Becker; Germany on the Eve of Occupation by Hans H. Gerth; The

United States and the Far East After the War by Frederic A. Ogg; The Pattern of Postwar Pan-America by Russell H. Fitzgibbon; and Canada: Good Neighbor to the North by H. Gordon Skilling.

The reviewer concurs with the obvious belief of the editor and the contributors that, in order for democracy to function effectively, intelligent and thoughtful laymen should be informed on current problems. A vehicle for attaining this end is the symposium. In order for the symposium method to be *effective,* however, at least two criteria should be met: (1) it should be limited to one field or, at the most, a few closely related fields, and (2) the editor should integrate the contributions. The present volume fails to meet either criterion.

DONALD SHAM

Washington, D.C.

Statistical Methods; Econometrics; Economic Mathematics; Accounting

Monthly Digest of Statistics, No. 1 (January 1946). Compiled by the Central Statistical Office, United Kingdom. (London: His Majesty's Stationery Office. 1946. *2s 6d* net. Annual Subscription £1 *12s 6d* net, including postage.)

Definition of Items and Units in the Monthly Digest of Statistics. Prepared by the Central Statistical Office, United Kingdom. (London: His Majesty's Stationery Office. 1946. *6d.*)

This newly published bulletin of 108 tables contains statistical series which before the war either were not available or were not brought together in a single publication and which during the war were available only in the secret *Statistical Digest, Series B.* Many of the series are given in less detail than in other publications, particularly the *Board of Trade Journal,* the *Ministry of Labour Gazette,* and the *Trade Accounts,* but in general further statistical reference to such publications will be unnecessary in the future. Most of the series in this first issue, which was released early in February, 1946, run through November, 1945, and some series are complete for 1945.

The most notable additions are series, recently compiled by the Ministry of Labor and National Service, showing the distribution of total manpower in Great Britain, the average weekly earnings in certain industries, and the average weekly hours worked. The working population in November, 1945, is shown as 21,134,000, compared with the latest revised figure for June, 1939, of 19,750,000. Actually these figures are not for "total manpower" since they exclude male workers over 64, female workers over 59, and private domestic servants of all ages. (Workers in Northern Ireland are excluded by definition.) Women in part-time paid employment, estimated at 730,000 in September, 1945, are counted as 365,000. By November, 1945, about

40 per cent of the 2,160,000 women who had joined the labor force between June, 1939, and June, 1943, had retired. It is likely that the labor force will be further reduced by about 1,000,000 during the next year as more women drop out and fewer youngsters seek work after the school-leaving age is raised to 15 in April, 1947. If further account is taken of the past transfer of workers from unrecorded private domestic employment to recorded other employment, it is apparent that the working population in June, 1947, will be very little different from that in June, 1939. Moreover, the employed civilian labor force is also likely to be about the same since the increase in the armed forces compared with 1939 will be about equal to the decrease in unemployment.

The average weekly hours worked in October, 1938, were 47.7 for men aged 21 and over; in July, 1943, 52.9; in January, 1945, 49.4. It is probable that the work week will be further reduced by mid-1947 to the pre-war level, if it has not already been so reduced. Thus, the total hours of civilian work in Britain in 1947 will be very much the same as immediately before the war. Weekly earnings, based on returns covering nearly 6 million employees, are shown to have increased 76 per cent between October, 1938, and January, 1946.

By paging through this rich compilation of statistical data, one can learn more in an hour about the pattern of the British economy and the recent changes, than it is possible to learn from reams of descriptive material. The figures are engrossing. They reflect not only industrial effort but also changes in consumption, the extent of crowding in public conveyances, and the degree of "make do." The average Britisher aged 16 and over drank 31 gallons of beer in 1944, compared with 24 in 1938, but the total alcoholic content was less; the consumption of spirits declined 15-20 per cent, and the consumption of tobacco per person rose about 15 per cent. The consumption of newsprint fell 80 per cent between 1938 and 1942. Of the 31.7 million acres of agricultural land, 12.9 million were cultivated in 1938 and 18.8 million were in permanent grass; in 1945, 19.2 million were cultivated and only 11.8 million were in permanent grass. The number of cattle increased 6 or 7 per cent, whereas the number of sheep, pigs, and poultry declined markedly during the war.

The monthly figures for 1946 will show the pattern and pace of reconversion. More data are now available on building activity, coal mining, exports, etc., than were heretofore available and these data will be the subject of monthly comment in Parliament and in the press.

The principal gaps in British statistics, which one wishes could be filled, are a series showing monthly income payments and an index of over-all productive activity. Perhaps even more basic is the need for data on capital expenditures.

It is to be hoped that publication of the Board of Trade's *Statistical Abstract*, suspended since 1938, will soon be resumed, as a supplement to the *Monthly Digest of Statistics*.

PHILIP S. BROWN

Washington, D.C.

Business Cycles and Fluctuations

Financing Full Employment. By JOHN PHILIP WERNETTE. (Cambridge: Harvard Univ. Press. 1945. Pp. 126. $2.00.)

Looking beyond the current reconversion and "catching-up" phase to that longer period when our central economic problem will again be that of maintaining an adequate demand for output, this little book presents "a positive program to achieve full employment and prosperity with a minimum of government regulation." Wernette wants to preserve the system of free enterprise and to avoid a government-controlled economy. He insists, however, that these objectives can not be attained in the absence of positive government actions to maintain the effective demand for output at such a level as to make full employment profitable. "The entire purpose of the program is to keep private enterprise from collapsing in some great future depression; to keep private enterprise alive by underwriting a big market for the goods and services which private business can produce" (p. 10).

To accomplish this purpose, the government will have to incur deficits during slack periods, and deficits will probably show a secular tendency to exceed surpluses. Wernette favors deficits whenever they are necessary to stimulate employment, but he is opposed to financing them by enlarging the national debt, for he considers the national debt to be a real burden in the sense that it discourages employment. In the first place, a huge debt is a "psychological" deterrent to enterprise; ". . . most persons seem to believe that it is a burden, and they worry about it" (p. 14). In the second place, the collection of taxes for servicing the debt discourages investment and employment. For these reasons, he would reduce rather than increase the national debt and would finance deficits incurred to stimulate employment through the issue of new money. "The basic fiscal policy is sound; but the deficits should not be financed by increasing the debt (which is a burden) but by creating new money (which would be a stimulating factor)" (p. 16). Essentially, therefore, this program would maintain full employment through appropriate monetary management.

Wernette rejects the traditional "gold and banking" monetary system as a vehicle for management, pointing out that it has not in the past succeeded in adjusting money supplies to the requirements of full employment and that there is little reason to expect greater success from it in the future. He would replace it with a fully-managed monetary system, which he calls the Full Employment Standard. The managing body would be a newly created Federal Stabilization Board, which "would be a kind of outgrowth and magnification of the present Federal Reserve Board of Governors. It would take over the powers and duties of the Reserve Board, and acquire some new ones. The Board would be assisted by a Federal Stabilization Advisory Committee, composed of representatives of the executive and legislative branches of the government" (p. 30).

The guiding principle of the Full Employment Standard is indicated by its name. Abandoning all reference to gold or silver, the FSB would issue or

withdraw money in the quantities necessary to maintain full and stable employment. "The technical apparatus for creating and paying out the money increments would be simple. The Board would create monetary certificates and deposit them in the Federal Reserve Banks for the account of the United States Treasury. These amounts would be added to whatever deposit credit the Treasury had at the moment. The Treasury would not differentiate between the dollars added to its bank accounts and those obtained from any other source; but would merely draw checks in the usual fashion" (p. 68). It would spend the newly-created money into circulation (1) to meet deficits caused automatically by any slump in tax base; (2) to finance public works, and (3) to retire debt. Necessary reductions of the money supply would be effected through Treasury surpluses and the usual instruments of credit control. Wernette appears to be less certain as to whether 100 per cent reserve banks should be substituted for the existing fractional reserve system. However, after admitting that the operation of the Full Employment Standard would be complicated somewhat by fractional reserve banking, he concludes that, "for the present, at least, it would be unwise to adopt the 100 per cent bank reserve plan. Let the banks continue to operate just as they have in the past" (p. 76).

Though the Full Employment Standard is the mainstay of Wernette's program, he does not consider it a cure-all, and calls upon government, business and labor for appropriate supplementary policies.

One of the most interesting features of this book is its author's optimism for America if full employment is maintained. He believes that with sustained prosperity our population, wealth and income will rise to such levels that by 1980 a money supply of 363 billion dollars will be required to maintain a price level approximating that of 1940. Thus, the government will have to issue large amounts of new money during future periods to prevent deflation. This is not true, of course, of the present period.

Wernette's primary purpose in this book was not to enter into an elaborate analysis of business cycles, but to present in popular style a program for action together with the principal reasons for it. In this he has been very successful. The style is simple and clear, and the book is interesting throughout. The reasoning behind the plan is essentially sound. Certainly monetary management has never had an adequate trial; we have been too much obsessed with questions of gold and silver and other monetary forms. It seems high time that we relegated these forms to a secondary position and concentrated our efforts on attaining what should be the prime objective of monetary policy—the maintenance of an appropriate flow of money spendings. It would indeed be a tragedy if we dismissed monetary policy as ineffectual because of the the failure of our half-hearted and frequently misdirected attempts in the past. Wernette brings out this fact very well. He also performs a service by insisting on the necessity of coördinating monetary, fiscal and other governmental policies, though I doubt that an advisory committee of the type suggested would be adequate for the purpose.

I question, however, three of the book's contentions. In the first place, I

suspect that its estimate as to the required supply of money during the next 35 years is somewhat high. Its analysis of population growth appears to stress economic factors too much, the predicted increase of wealth and income is quite large, and the demand for money to hold as a percentage of national income seems high. In the second place, the extent of government intervention in economic life is underestimated to the extent that the "stagnation school" is right. If despite low interest rates, private outlets for investment are far below the volume of savings at full employment, the government may have to spend large amounts as entrepreneur. And in the third place, I doubt the wisdom of retaining private fractional reserve banks under the Full Employment Standard. To the extent that private banks created money on the basis of their added reserves, the plan would not succeed in reducing the national debt. Moreover, with fractional reserve banking the FSB would lose accuracy in its control of the money supply. None of these criticisms reduces the validity of Wernette's central thesis, however.

LESTER V. CHANDLER

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Public Finance; Fiscal Policy; Taxation

The Incidence of Excess Profits Taxation. By MARION HAMILTON GILLIM. (New York: Columbia Univ. Press. 1945. Pp. 179. $2.75.)

Although the federal excess profits tax has been repealed, there is a genuine need for this study of the incidence and economic effects of excess profits taxation. During the recent war about one-fifth of federal receipts were derived from this source. It was also used extensively during the First World War. However, except for an essay by the late Professor David Friday, the author of the present work was unable to find any study devoted exclusively to the incidence of an excess profits tax.

Since the base of an excess profits tax is the amount of net income over an assumed or legally defined normal, Professor Gillim begins with the incidence of a general income tax. Chapter 1 contains an excellent though brief summary of prevailing theories for and against the shifting of such a tax. A majority of students of public finance have held with Seligman the traditional view that a general tax on net profits cannot be shifted. Even in a period of rapidly rising prices it would be invalid to argue that the tax was a causal factor. This theory of incidence needs to be examined in the light of criticisms of recent writers, particularly De Viti de Marco and Duncan Black. De Viti held that the orthodox theory of shifting was deficient because of its neglect of demand. He concluded that the "introduction of a tax always gives rise to phenomena of shifting." Duncan Black accords high praise to the contributions of De Viti, but believes that he in turn neglected the supply schedule of the factors of production. The true theory of incidence, he thinks, can be found only by a recognition of the "reactions" of taxation on the forces of both demand and supply.

Professor Gillim shows that the development of opposing conclusions regarding the incidence of a general income tax has arisen, first, from varying treatments of demand and of the effects on demand of government expenditures. The Colwyn Committee in its Report in 1927, though mainly following the traditional approach, called attention to possible changes in price by forces from the demand side. Perhaps it should be noted that, when this Report was written, the newer developments in the relation of demand to price in the field of monopolistic competition were just beginning. Another reason for the contradictory theories lies in the definition of incidence itself. The author does not agree with the Colwyn Committee in holding that incidence "is only concerned with the question on whom the more immediate burden of the tax as a tax rests." On the other hand, she does not include with Black certain broad and highly remote effects of a tax in the very long run (p. 64). Possible effects not involving price changes are also excluded.

The author has thus taken a commendable position between a narrowly rigid definition and one so broad as to remove boundary lines altogether. Certainly the reviewer would not, with Black, follow the late Professor Cannan in urging that the term "incidence" be cast overboard and "only the effects of taxation spoken about in the theory of Public Finance." Even though it may not be possible to draw a line with scientific precision between incidence and economic effects, it is desirable to retain the use of the term "incidence" in order to give a sharper perspective to the analysis.

Professor Gillim states certain reasons why the excess profits tax is a special case in income taxation and why its incidence is worthy of separate study. In the first place, the tax is measured against some pre-determined normal income. Clearly it is not possible to devise a method of ascertaining with complete accuracy the normal profit of all corporations. Some inequities are bound to occur and these will affect the distribution of capital among enterprises. The relative position among firms is disturbed and there is a strong incentive to evasion as well as to shifting. In the second place the tax has been used primarily as a war measure. As such it is likely to be regarded as a temporary device rather than as a permanent part of the tax structure. In this circumstance firms may establish different policies in respect to output, costs and prices. This might also be true of other forms of income taxation, but the excess profits tax is "more exclusively a war tax." A third factor to be reckoned with is the rate of the tax. The excess profits tax is an added burden to the existing corporate tax system and thus may well give rise to an increasing effort to shift the tax.

Incidence is considered first under conditions of pure competition. Here excess profits might exist as a result of temporary disequilibrium. Some firms will experience profits in excess of a normal return as defined by statute. The statutory normal is a constant figure and must be compared not only with actual profits but also with profits as a theoretical normal over the long run. There will be more or less variation between statutory normal profits and the theoretical normal required to maintain capital and management in a business. Over a long period changes will occur in the demand or cost functions. The conclusion is reached that in the market and short periods the tax

will not be shifted except possibly in industries where production may be postponed because of a depletion of resources. If shifting should occur in the long run, it will be the result of some imperfection which causes the tax to fall upon profits that are truly normal.

Much the longest chapter of the book is that devoted to the treatment of incidence of an excess profits tax under monopolistic competition and monopoly. Here statutory excess profits may appear not only because of imperfections in definition of the base period, but also as a result of changes in demand, variation in the margin between cost and selling price, change in the general price level, etc. The author analyzes the incidence of a general excess profits tax as a permanent tax and as a temporary measure for three periods of time—the market, the short run and the long period. Assumptions are made in respect to proportional and progressive rates. It is of special importance to note the logical effect of a tax with a proportional rate of 100 per cent or with rates which are steeply progressive to that point. The removal of the profit motive will result in a loss of incentive by the taxpayer and create indifference toward costs, good-will of customers and policies designed to effect economies. A similar conclusion was reached by Hicks, Hicks and Rostas in their recent study of the excess profits tax in Great Britain, as follows: "As has already been pointed out, the really dangerous thing about a 100 per cent tax is not so much that it provides no incentive to make profits, but rather that there is no adequate inducement to avoid losses."[1] Moult also finds that an excess profits tax which operates at the 100 per cent rate interferes with the entrepreneur's principal motivating force and "tends to increase both the real and monetary costs of production."[2]

The author has demonstrated with much effectiveness that under conditions of monopoly and monopolistic competition some shifting of an excess profits tax will almost inevitably take place. This will be true in the market or short period and will probably occur in the long run. The position held by traditional theory that shifting under the assumed conditions is impossible becomes invalidated unless the excess profits tax is general, permanent, does not influence demand and does not alter total investment. Certain other assumptions of greater or less importance must be made. Thus the statute under which the excess profits tax is imposed must be drawn and administered with a perfection that is seldom if ever attained. For the incidence of the tax to remain wholly on the recipient of excess profits, one must assume a conjuncture of circumstances that could scarcely be proved to exist in a dynamic world. The final conclusion of the author is that some of the forces set in motion by the tax are in the direction of higher prices, while others move toward lower prices, and the "net effect of an excess profits tax is not ascertainable."

The book is an excellent contribution to the recent studies of incidence and to the body of literature on tax theory. Professor Gillim modestly states that a serious limitation is the hypothetical nature of the analysis and the absence

[1] Hicks, Hicks, and Rostas, *The Taxation of War Wealth* (Oxford Univ. Press, 1941), p. 101.

[2] Frank G. Moult, *The Economic Consequences of the Excess Profits Tax* (Fiscal Press Ltd., 1943), p. 91.

of inductive tests. Yet the study has been written with exceptional insight to the problem of incidence and with remarkable ability to translate the intricacies of the subject into explicit language. It is a worthy addition to the valuable studies on the incidence of income taxation that have appeared in recent years.

TIPTON R. SNAVELY

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Financing Government. By HAROLD M. GROVES. (New York: Holt. 1945. Pp. xv, 653. $4.00.)

This is the first revision of this textbook in public finance. Since the author could not be expected to have changed his basic ideas, attention centers on the revisions made.

In the original edition, public finance was treated under six main divisions, but in the revised edition four divisions were found sufficient. Public borrowing and the problems of the fiscal system as a whole were included under public expenditures. In view of the importance of public borrowing in the newer theories of the ends to be served by such means, this subordination is, in the reviewer's mind, somewhat doubtful.

The chapter on intergovernmental fiscal relations has been almost completely rewritten to take advantage of later research in that field, particularly the Treasury study which Professor Groves directed. Considerable changes were made in the income and estate tax chapters, and throughout the book there is evidence that the material in every chapter was carefully scrutinized before being included in the new edition. Thus in the chapter on shifting and incidence, the section on the processing taxes was omitted and those on the income and profits taxes expanded. The chapter on tax limitation in the original edition was cut to a section in this one. In the treatment of modifications of the property tax, less attention was given to the farmers' tax problem, and a new section on the property tax and municipal revenues was added. Four of the chapters on public expenditures were condensed into one, with the resulting treatment greatly shortened. Furthermore, greater emphasis was thereby given to taxation, a desirable change.

The chapters dealing with the taxation of business, consumption, motor vehicles, polls, and natural resources, and the chapters on nontax revenues, the power to tax, and state and federal aids are, for the most part, the same in this as in the other edition. The changes made were in the main designed to bring the material up to date. More emphasis is given to fiscal policy in relation both to the public debt and to the problem of war finance.

Among the miscellaneous changes are the following: Less reliance is placed on tables. Fifteen tables are used in the revised edition as compared with forty-seven in the old. In the rewriting, somewhat less attention has been given to Wisconsin problems. Most of the selected reading lists at the ends of the chapters have new references added. Some lists have been expanded considerably. The setup of chapter headings and subheadings is more attractive.

M. SLADE KENDRICK

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International Trade, Finance and Economic Policy

National Power and the Structure of Foreign Trade. By ALBERT O. HIRSCHMAN. (Berkeley and Los Angeles: Univ. of California Press. 1945. Pp. xiv, 170. $3.00.)

Dr. Hirschman defines his purpose in this volume as "a systematic exposition of the question of why and how foreign trade might become or might consciously and efficiently be used as an instrument of national power policy" (p. 12). By "national power" the author means "power of coercion which one nation may bring to bear upon other nations" (p. 13). The approach to this exposition is through theoretical analysis, supplemented by historical references and three statistical studies.

Except for noting briefly that foreign trade has its "supply effect" on military potential, the analysis is entirely devoted to the "influence effect"—the direct source of power which resides in the ability of one nation to interrupt its trade with another and thus to inflict or threaten to inflict damage upon that other country as a means of attaining national ends. Elaborate analysis is scarcely required to demonstrate that such a condition of influence and dependence can exist, and has existed, under certain conditions. Dr. Hirschman's theoretical section may, therefore, be regarded as an analysis of what these conditions are, or, alternatively, as prescriptions of techniques for a nation which desires to manipulate its trade relations for power purposes.

The prescription is essentially this: find countries whose trade is small in comparison to your own, whose trade you can monopolize in large part, and who would have great difficulties of economic adjustment if their trade were to be cut off, and you can acquire a large measure of influence over the economic, political and strategic policies of those countries. It is not even necessary to monopolize all trade; if certain groups in these countries would be especially hard-hit by interruption of trade, these groups may become "a sort of 'commercial fifth column' " on your behalf. Since, however, alternative markets and sources of supply, even though less advantageous, will usually exist for these dependent countries in the real world, special measures can be taken which will make it difficult for them to shift away from you: *e.g.*, take their products well above world prices, induce them to shift to production in which they have no comparative advantage *vis-à-vis* the rest of the world, use predatory dumping, handle their transit trade, etc. Prevent them from switching sources of their imports by a policy of bilateralism and blocked payments. A passive balance of trade with these countries may not always be an indispensable condition, but it is extraordinarily helpful.

This is not only abstract analysis; it is, as Dr. Hirschman records, an outline of the high-spots of German commercial policy, especially toward southeastern Europe, in the thirties. In lesser degree and less dramatically it has also undoubtedly been used by other countries on occasion. The catalog given in the volume by no means exhausts the available techniques.

The author accepts "the case for free trade, on economic or welfare grounds, . . . [as] . . . unanswerable," but contends that his analysis demonstrates

that "it [free trade] does not have the additional merit of doing away with the political aspect of international economic relations" (p. 76). Without entering into controversy over what the proponents of free trade have or should have claimed on the power aspects of international trade, it may be observed that the one thing which Dr. Hirschman obviously does not demonstrate is what is claimed here. The free trade analysis rested, by definition, on the assumption of an absence of state intervention in the terms, conditions and direction of trade. What the author is concerned with is the danger to vulnerable states, especially if they are small and poor, when a large state departs from this assumption and begins to control trade, and particularly when it takes steps to prevent some trading partner from making alternative adjustments. Furthermore, as he recognizes (p. 27), his analysis depends for the most part upon factors from which the "classical theory" deliberately abstracted, *viz.*, the short-run losses in the reallocation of resources following an interruption of trade.

It is not particularly relevant to the author's main thesis, therefore, to examine numerous points in his treatment of the theory of international trade which tempt critical review. One of the most disconcerting features of the book is that it is frequently difficult to ascertain whether the author attributes alleged assumptions and conclusions to the economic theory of international trade or to the more extravagant claims made in the political debate over the virtues of "free trade" as a form of commercial policy.

It is important, however, for commercial policy to inquire whether dangerous conditions of domination or dependency are typically inherent in all international trade or whether they are only a potential danger which is infrequently exploited and can be policed. Despite some more cautious statements, it is clear from numerous passages that the author concludes that it is the former. ". . . even if war could be eliminated, foreign trade *would* lead to conditions of dependence and influence between nations" (p. 15; my italics). ". . . the contest for more national power permeates trade relations . . ." (p. 40). "The Nazis have done nothing but exploit to the fullest possibilities *inherent* in foreign trade within the traditional framework . . ." (p. 53).

His conclusion for commercial policy is that it will not be sufficient to abolish trade discriminations, quotas, multiple exchange rates, bilateral arrangements, blocked currencies, etc. Large nations tend to account for a larger share of the trade of small nations than they do of other large nations, and the trade of small nations tends to be concentrated both as to markets and products. The mere negative power to stop trade, therefore, is a sufficient instrument of power-policy, and the author fears that where there's a way there's likely to be a will. Nations therefore can be expected to eschew economic nationalism only if the power arising out of international trade is internationalized by effective limitations on national autonomy over the whole field of international economic relations and the establishment of an institutional framework on international or supra-national lines, giving to an international authority not only ultimate supervision over the machinery of international trade, but also the actual provision of several of its most essential mechanisms.

Dr. Hirschman has dealt with a very real phenomenon which, as he observes, often tends to be ignored, if not denied by the defenders of so-called liberal commercial policies. But it is open to question whether he has not in turn greatly overstated the universality of the dangers and unnecessarily rejected less utopian solutions than that which he proposes. In particular, he appears to overestimate the amount of coercion which one state could exert on another through trade relations, in the absence of discriminatory methods of trade control and direct intervention by the state in the direction, volume, and composition of trade and the means of payment. The concentration of trade by countries or by commodities or, in some cases, the mere size of trade between a given pair of countries may indeed enter into the consideration of statesmen in their conduct of foreign relations. But for them to become elements of strong coercion will in most cases require that they be supplemented by the use, or the threat, of more selective techniques. Without these accessories, the power to interrupt trade and payments becomes at best a blunt instrument of influence, and deterrents of a supply and welfare character become greater and more apparent to the country instituting the action. When trade is highly manipulated and closely controlled, on the other hand, "political" considerations are almost certain to enter into many of the decisions of the controllers. In large measure this would still be true if an international authority wielded the power of control.

The moral for commercial policy to be drawn from this volume is that a departure from a non-discriminatory trade régime should be subject to the closest scrutiny for its potential "power" implications as well as on grounds of economic welfare. Beyond that the evidence adduced is less convincing as to the magnitude of the dangers inherent in international trade.

LEROY D. STINEBOWER

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A Cartel Policy for the United Nations. Edited by CORWIN D. EDWARDS. (New York: Columbia Univ. Press. 1945. Pp. vii, 124. $1.25.)

The five studies contained in this volume were originally presented as lectures at Columbia University in March and April, 1945. They deal with American policy toward international cartels, on the one hand, and with concerted action of the United Nations on business combinations, on the other. One theme runs through all five chapters, namely, that coöperation of private business men on international markets almost invariably results in socially undesirable situations, and that there is little hope that such private coöperation may lead to balanced expansion of trade and employment. All five studies are lucid, stimulating, thought-provoking, and, above all, most timely.

Fritz Machlup's paper on "The Nature of the International Cartel Problem" introduces the volume. He enumerates three considerations which influence cartelists in framing their market policies. They are (1) to keep prices on a level which they can defend as being "fair," and thus try to avoid adverse public criticism; (2) to maintain market policies which will discourage new entrants from widening the market; and (3) to adjust market policies to actual demand situations in order to attract increased new demand as far as

possible. No doubt, these propositions are fundamentally significant for the "nature" of cartels and are a key to the thinking of cartelists.

Professor Machlup defines cartels as "business agreements which have the purpose or effect of reducing or regulating competition." He admits that common usage distinguishes between combines and trusts, on the one hand, and other types (collectives of independent profit-making units), on the other. However, he favors this more inclusive concept. In the opinion of this reviewer, there is a fundamental difference, both in structure and operation, between combinations of the corporate type and collective market controls consisting of independent entrepreneurs. Such a distinction is of capital importance from the point of view of framing international public policies. No doubt, borderline cases sometimes blur this distinction. The legal suppression of cartels accelerates, according to Mr. Machlup, the development of intercorporate combinations.

In the absence of a cartel there would be a greater volume of production, and trade terms would be more favorable to the consumer, according to Mr. Machlup. Also, employment and investment policies would move on socially more desirable lines. The author mentions the following example of signal malinvestment caused by cartel practices. In cartels based on quotas the market shares of the cartel members are frequently determined in proportion to their production capacity. "The greater the stand-by capacity of a cartel member, the better his chances to win a higher quota." This practice, in the experience of Professor Machlup, induces cartel members to "try to prepare for the next renewal of the agreement (and for the next higgling over production quotas) by further increasing their already excessive capacity." This is to say that the principal motivating force for capacity enlargement would be the expectation of a larger quota. It is to be hoped that Professor Machlup will soon publish the empirical material which served as a basis for his example. This reviewer knows of several cases showing that business men exported large quantities of their products at very low prices in order to better claim higher quotas in future cartel negotiations. The problem of malinvestment with reference to competitive and coöperative international markets requires much additional research.

Mr. Machlup sees three alternative avenues practicable in the field of cartel policies. They are: government controlled cartels, uncontrolled cartels, and no cartels at all. He chooses the course of no cartels at all. If the choice has to be made between uncontrolled cartels and those controlled by public agencies, he would choose the former, because of the fact that "free" cartels operate precariously in permanent political and economic insecurity, whereas government regulation confers upon cartels dignity and recognition. The reader will regret that the scope of the study did not permit Mr. Machlup to elaborate on many basic issues raised and answered in his study.

Ben W. Lewis's study is on "The Status of Cartels in Post-War Europe." It is indeed a fascinating subject in view of the rather diversified, unsettled, and unpredicable conditions on that continent. The essay includes an extensive discussion of American policies toward cartels of defeated Germany. In addition, it analyzes the kind of reception American cartel proposals may

expect in post-war Europe. The usefulness of cartels is, in the opinion of Professor Lewis, restricted to serving the purposes of aggressive, dictatorial governments. He considers it impossible to control market coöperation of private entrepreneurs "by processes open to democratic governments." According to the author, "A democratic government which recognizes and accepts cartels cannot decently even be suspicious of their activities. There is much more reason to believe that cartels, once accepted, will take over the government than to believe that a democratic government can recognize and control cartels and remain democratic." Countries like Canada, Belgium, Holland, Sweden, France, Czechoslovakia, Switzerland, the United Kingdom, accepted (or tolerated) cartels before World War II. Although this policy is open to criticism, the idea that the motley agglomerate of cartel organizations (glass, steel, nitrates, ec.) would have been able to operate their respective governments seems to require elucidation.

The idea of cartel-operated governments may refer to fascist tendencies of certain capitalistic organizations, or to the excessive influence of pressure groups. It may be interesting to note that Edward Hallett Carr in a recent publication conceived of the American government as run by "big business." According to Carr, "in the United States 'big business' acquired almost undisputed control of the machinery of government." Whether in democratic countries cartelized entrepreneurs have more reactionary inclinations than those who do not join cartels it would be interesting to ascertain. That great economic power concentrated in private hands—if without efficient control—may endanger democracy is beyond question. Professor Lewis's discussion of English cartel policies is original, realistic and based on historic facts.

Robert P. Terrill's study is entitled "Cartel Policy and International Security." It includes a discussion of whether cartels may be used as an instrument in the maintenance of peace and whether cartels menace national security. Mr. Terrill takes up the attempts of European nations to found international coöperation on government-sponsored organizations of private business. He soundly judges that such policies would lead to disaster rather than to peace. These policies would adversely influence "open door" pledges in respect to international markets.

The author justifiably cautions "against undue emphasis on the specifically German character of international cartels and similar arrangements." He warns against any illusion that the undesirable features of international cartels are permanently suppressed by the mere elimination of German influence. He also calls attention to the dangerous influence of highly nationalistic economic policies supporting all kinds of vested rights in the economic sphere.

In the opinion of Mr. Terrill, restrictive agreements necessarily constitute a disturbing factor in international peace. He thinks that the military security of the United States does not require measures which would prevent a multilateral and non-discriminatory system in economic intercourse.

Theodore J. Kreps discusses "Experience with Unilateral Action toward International Cartels." His essay raises four questions. First, what is the magnitude and character of the power which may unilaterally but successfully achieve control over international cartels? Second, what types of action have

been tried by nations unilaterally in the cartel field? Third, what was the success or failure of such action? Fourth, can unilateral action alone achieve the desired end?

Mr. Kreps minimizes fantastic statements about the large volume of world trade controlled by international cartels. He is right in stating that at least without the tacit tolerance of United States entrepreneurs, very few world cartels could persist. In discussing European cartel policies Professor Kreps does not take into account the unique political circumstances of the inter-war period which exercised paramount effect upon those economic activities. He quotes the movement of German domestic prices on cartellized and free markets without indicating that these figures had a relatively small bearing on the corresponding international prices. Although there is no doubt that German cartels served the nazi war machine, Mr. Kreps's statement "that cartel operators and their adherents provided practically all the collaborators Germany needed to achieve economic and military conquest" undeservedly exonerates non-cartellized industrialists and other individuals.

This reviewer thinks Mr. Kreps's opinion that in the United Kingdom cartel agreements are "by and large voidable and unenforceable" is over-simplified. However, he is right in stating that the lack of tariff protection is in many cases a good remedy against cartel abuses. It also seems somewhat strained to this reviewer to say that "If technology is kept free, the extent to which intercompany competition may remain in any one industry, say copper, becomes secondary." In copper, the friendliness of the "rivalry" among copper producers was of greater significance than collaboration in the field of technology. The competition of other metals, though often emphasized, was of minor importance. However, there are commodities and services whose international markets are decidedly influenced by coöperation in the field of technology.

In the opinion of Mr. Kreps, unilateral action by the United States against cartel abuses will be effective but should be reinforced by multilateral action of the United Nations.

Corwin D. Edwards wrote the concluding chapter on "The Possibilities of an International Policy toward Cartels." This is a realistic appraisal of what can be hoped for in the sphere of concerted international action.

Professor Edwards does not make a distinction between voluntary and compulsory marketing arrangements of entrepreneurs. This terminological simplification leads him to the conclusion that in such states as Belgium, Czechoslovakia, Switzerland, South Africa and Holland, statutes encouraged cartels. However, he properly judges that, even in countries which tolerated cartels, there was no unanimity of opinion or policy as to the best course of action. His statement that "No international cartel is willing to assign to the traders of one country a share of the world market appreciably larger than those traders might be able to command in competition" is generally right.

The most illuminating part of Mr. Edwards's study is the section dealing with the difficulties and prospects of joint international action and his suggestions as to future policy.

In the cartel field, unrestricted competition of ideas is more important and

timely than in any other field of economic discussion. Such rivalry of thought is the prerequisite of the elimination of theological methods of reasoning about cartels which in themselves inadvertently shelter cartel abuses. The volume reviewed here is a useful step in the direction of enlightenment and sound policy determination. Even those who do not agree with all of the book's propositions will read the volume with interest and profit.

ERVIN HEXNER

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Grundsätze und Methoden zur Ermittlung der richtigen Währungsrelation zum Ausland. By HANS BÖHI. (Berne: Francke. 1944. Pp. 176. Sw. frs. 9.80.)

Kapitalexport und zwischenstaatliche Warenbewegungen. By JÜRG J. SCHWENTER. (Berne: Francke. 1945. Pp. viii, 90.)

These two volumes are a product of recent Swiss thinking on international trade problems shortly before the end of the war. They are concerned with two important aspects of the future international trade problem of Switzerland, namely, the achievement and maintenance of a stable balance of trade after the war, and the possible effects of an export of capital upon the balance of trade.

The first volume falls in two parts, the first dealing with the problem of determining the necessary conditions of price equilibrium in relation to foreign countries and the second with practical methods for determining empirically the respective points of equilibrium and the disturbances of this equilibrium, *i.e.*, the so-called price parities or disparities relative to other countries.

The importance of this problem for the Swiss economy needs hardly to be emphasized. Construction and exports are the two pillars of the Swiss economy. In 1938 Swiss imports, less the cost of imported materials included in exports, amounted to 1,370 million Swiss francs or almost 17 per cent of her national income, and exports amounted to 1,317 million francs. Exports for Switzerland are important not only for her capital formation, but also for achieving greater industrial rationalization and technical progress. The high standard of living which a lively international trade makes possible enables the population to pay the high prices of domestic agricultural products and stimulates the demand for housing. The Swiss export trade is, therefore, the determinant factor in her business cycle and employment policy, and price and cost relations of Swiss export products and those of competing foreign products are of decisive importance.

The analysis in the first part is based on the assumption that in all countries after the war there will be a strong tendency to restore the operation of the price mechanism in international relations as soon as possible while keeping exchange rates relatively stable. Although commitments will have been made for supporting the price of certain domestic products, particularly in agriculture, and although price disparities due to cost of transportation and existing tariffs are likewise taken into account, all other limitations due to exchange controls, quotas, etc., are assumed away.

The first issue raised is whether, as the classical theory has assumed,

there always exists a point of stable equilibrium. The author reviews some of the well-known criticisms which have been levied against the classical theory, such as the unrealistic assumption of stationary conditions, and the disregard for the volume of production which is likely to fluctuate in either direction in the process of achieving equilibrium in the balance of payment. He also notes certain more recent considerations which circumscribe the usefulness of classical theory, such as rigidity of the price and cost structure, the time required for necessary adjustments and structural changes, and the influence of the modern credit system in destroying the responsiveness of the balance of trade to internal price developments.

As a first step in delimiting the applicability of classical analysis, it is therefore necessary to study the conditions under which the balance of trade is positively elastic.[1] This will be the case if the countries have a similar production structure, *i.e.*, if their products compete. If this condition does not prevail and there is no direct competition between the products of two countries, the effect of a change in prices will depend upon the elasticity of demand for the particular commodities. In the case of essential non-competitive commodities, price changes will have little or no effect on demand, and the balance of trade will be negatively elastic, leading to an unstable price relationship with no equilibrating forces within certain limits. These products the author calls monopoly products. The reference is not to private monopolies but to a monopoly position of the country as a whole.

Whether a country has a positively or negatively elastic or a neutral balance of trade will, therefore, depend upon the relative importance in its foreign trade of monopoly and competitive products. Obviously the case of a complete monopoly is a limiting assumption and most finished products will take an intermediate position. The author concludes that countries like Switzerland and Great Britain before the war did not have a strongly positively elastic balance of trade because of the predominance of finished products of special quality. He recognizes, however, that the elasticity was made somewhat more positive by their diversified production and high standards of living which created a demand for luxuries.

The second important element in a study of equilibrium price conditions is the relation of the price structure of the rest of the economy to the export industries. Only if the entire economy of each country is in balance is it possible to determine the conditions for stable price relations between two countries. The reason is that there exist equalizing tendencies within an economy as between the conditions of production of international and "national" commodities. The latter are not subject to the direct influence of international price relationships. They are, however, related to the international goods of the country through internal price relationships and the tendency toward equalizing the cost of production, though with a considerable time lag. The relation between the prices of national goods in two countries depends, therefore, primarily upon the relation of the factors of production

[1] Though the discussion in the following is limited to the balance of trade it is clear that the effect of changes in the other items of the balance of payments are taken into consideration.

in those countries. Actually this is relevant mainly with respect to the productivity of labor, because of the relatively free international movement of capital. This analysis explains also why the price level is generally higher in more developed countries. Since the difference in productivity between developed and undeveloped countries is usually greater for international than for national goods (mostly because of the type of products in which the developed country specializes), this leads to a difference in prices between the national goods of the two countries.

In trying to measure the disturbances of equilibrium between two countries, therefore, the equilibrium of the prices of national goods must also be taken into account. Their importance is due to the fact that they constitute a cost element (*e.g.*, as intermediate goods) in the prices of international goods; they influence the structure of the domestic demand; and they determine the relation of the prices of the factors of production, influencing in particular the movement of labor between domestic and export industries.

Since, as has been noted, there are several determinants, the next question is to determine what indicators are available to measure the extent of the disturbances in equilibrium. One price average would obviously not suffice, since the averaging process will hide underlying disturbances which have different effects on the balance of trade and the production equilibrium within the economy. As an alternative, individual price groups might be compared, distinguishing particularly between rigid and elastic prices. To the latter belong the prices of international goods while national goods and wages fall in the former category. Here two ways of measuring are possible, either a comparison between the most rigid prices of two countries, or the use of the existing internal price disparity between national goods and international goods as an indicator of the external price disparities. This procedure faces two difficulties, however. One is that many international goods are of a monopoly character and therefore not directly under foreign competition; and, secondly, this approach assumes that no price disparities exist in foreign countries. This assumption might be particularly misleading in times of crisis when wages and national prices, although abnormally high, are not higher than foreign wages and prices.

The author therefore suggests the use of wages or cost of living indices as a supplementary basis for comparison. The former is preferable, since the cost of living index would still be influenced by import prices. Wages, on the other hand, are not only the most rigid factor, but they are also the most important cost and income element and the most frequent cause of price disparities.

In the second part of the study the author tries to determine how accurately, on the basis of the previous analysis, actual disturbances can be measured. He also discusses the alternatives of using general price indices or studying price and cost relations in individual industries, and concludes that both methods should supplement each other.

Though the issue of price equilibrium involves a comparison with all other countries taken together, actually only two countries can be compared at one time. Furthermore, significant answers can be obtained only by com-

paring competing countries. The author therefore proposes comparison of Swiss indices with an average of British, American and German indices. For that purpose he discusses the available Swiss indices to determine to what extent they are representative of the prices of Swiss national and international goods and of Swiss wages, and offers suggestions for their improvement. Finally the outlined method is tested by application to the course of Swiss and foreign wages before and after the Swiss devaluation of 1936. Although the Swiss wage index has shown a continuous deterioration since 1931 as compared to American and British wages, the devaluation brought about a significant adjustment between the three. Similarly the considerable internal disparity existing between the wage index, the wholesale index, and the cost of living index was considerably narrowed, attesting the effectiveness of the Swiss devaluation.

Despite the interesting contributions made in this volume, it is not likely to be of great usefulness in giving an answer to the immediate problems facing Switzerland. Its suggestions apply primarily to conditions which may prevail once free international trade is reëstablished, but it does not provide any answers for the interim, and does not indicate the probable effect of the war and its aftermath on the Swiss economy.[2] A major problem of adjustment, however, will be faced precisely during this period and before joining any international monetary organization. Once international agreements prevail, unilateral action by any country will be considerably limited and attention will have to be directed mainly toward internal adjustments rather than international devaluations. Inadequate attention, however, is given by the author to this second problem. He is mainly concerned with relatively short-run problems and adjustments necessary within the *existing* production structure. More fundamental adjustments in the cost and price structure of some economies may be necessary to effect a transition to a stable post-war economy. This volume is the first installment of a comprehensive study of the Institut für Wirtschaftsforschung of the conditions of equilibrium of the economy. It will be interesting to see whether further publications will deal with these aspects.

The second book is a theoretical discussion of the effects of an export of capital on the balance of trade and the economies of the capital exporting and importing countries. In particular the author endeavors to show under which circumstances a capital export is more likely to be carried out through a decrease in imports rather than an increase in exports of the capital exporting country. In the opinion of this reviewer, however, the author has failed to establish either the probability or the relevance of such a situation. Furthermore, it seems clear that the existence of such a situation usually implies that an export surplus has already taken place at an earlier date and the balance of trade was not balanced to begin with.

In analyzing the transfer problem in those cases where the export of capital is not followed immediately by an increased demand for the goods

[2] *Cf.* in this connection the illuminating article by G. Haberler, "The Choice of Exchange Rates after the War," *Am. Econ. Rev.*, Vol. XXXV, No. 3 (June, 1945).

of the capital exporting country at prevailing prices and exchange rates, the author distinguishes between countries on a gold standard and those on a paper standard. If the currency standard prevailing in both countries is the same, no special transfer problem arises since it will be taken care of by a change in the price level of the two countries or in the exchange ratio between them. A transfer problem of a "higher order" arises, however, according to the author, where only one country is on the gold standard and its price level changes while that of all other countries remains unchanged. In the latter case the transfer will presumably require a longer period of adjustment.

On the whole the discussion tends to be too simplified and schematic, and rather superficial, and the analysis is not pushed far enough. To a considerable extent it goes over familiar ground and fails to add anything significantly new. Many of the assumptions are highly unrealistic and partly contradictory, leading to misleading conclusions. It seems, therefore, doubtful whether the study will contribute anything to the theoretical analysis or provide the answers to questions which the problem of capital exports is likely to pose in the near future.

WALTER F. STETTNER

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Rival Partners: America and Britain in The Postwar World. By KEITH HUTCHISON. (New York: Macmillan. 1946. Pp. ix, 262. $2.00.)

There are few issues fraught with more significance to the entire world than the post-war pattern of economic relationships between the United States and the British Empire. Mr. Hutchison's highly readable book presents in simple terms the salient factors—both economic and political—which are likely to determine that pattern.

Mr. Hutchison devotes the first part of his discussion to a review of the specific problems affecting the United States and British economies, and then proceeds to an analysis of areas of potential conflict and coöperation. In appraising the domestic position, he stresses the war-generated disruption of the individual structure; the depletion of basic raw material resources, such as lead, copper, iron ore, and timber, contrasted with greatly increased manufacturing capacity for such materials as steel and the light metals. In the opinion of this reviewer, he somewhat overemphasizes the immediate dangers of overcapacity in the United States. For example, there is every evidence today that the demand for steel can fully utilize all the output from existing plant facilities for some time to come; certainly our present problem for sheet steel, wire products, and pig iron is one of acute shortage rather than of surplus. The increase in population, the higher level of purchasing power, and the unsatisfied wants of the war period should contribute to making possible relatively full utilization of capacity and manpower for a number of years at least. This does not, of course, preclude the danger of catastrophic collapse at some future date and, as Mr. Hutchison points out, the political climate in this country is not at present favorable to the initiation of positive steps to avert

that collapse with all its inevitable impact upon the economy of the entire world.

In analyzing the British situation, Mr. Hutchison cites the now familiar figures showing how the liquidation of foreign investments during the war has affected the British balance of trade. Prior to 1939, physical exports from the United Kingdom were sufficient to support a little over half of the British imports, with the bulk of the remainder defrayed from return on foreign investments and payment for shipping services. Not only has British investment income been cut approximately in two, but in addition the United Kingdom is confronted with the need for making very substantial payments on foreign debt incurred during the past six years. To bring the position into balance by curtailing imports can only mean a sharp reduction in the British standard of living. Yet the expansion of exports is severely hampered by the relative inefficiency of large segments of British industry and the high costs of basic raw materials, such as coal. Retention and enlargement of the Sterling Area, with all its restrictionist impact upon the flow of world trade, would probably be no more than a temporary palliative which would actually aggravate the underlying problems, but this course is nevertheless attractive to substantial segments of British opinion. The alternative of moving back toward free trade, which Mr. Hutchison refers to as "the path through Bretton Woods," is, of course, far more desirable for the world at large and probably, in the long run, for Britain. It cannot be denied, however, that this latter policy is fraught with hazard to the British economy, particularly in the light of the current trend of American political thinking.

From these not too promising backgrounds, Mr. Hutchison proceeds to his analysis of the future of Anglo-American economic coöperation. During the war, through the mechanism of the Combined Boards, issues involving the distribution of raw materials and productive effort were settled with what must be regarded in retrospect as a high degree of success. However, the Combined Boards had the incalculable advantage of working toward a clearly defined mutual objective and, while conflicts of interest inevitably arose, it was usually possible to subordinate them to the common good. To the post-war world there are no similarly clear guide posts, and areas of clashing interest are rapidly displacing those of mutuality. Combined Committees for a few critical items, such as coal, tin, rubber, leather, and textiles are still functioning, but their problems are multiplying and their effectiveness dwindling as new factors emerge. There is still the broad common goal of general world prosperity which would mean increased markets for all, but this goal is unfortunately too indefinite to provide a solution for problems in which immediate national interests seem paramount. The possibility of handling continuing problems in specific areas, such as cotton, sugar, and rubber, through the mechanism of broad international committees, is far from assured.

Similar problems, points out Mr. Hutchison, arise in the field of transport, both air and maritime. The clearly defined objectives which guided the allocation of these resources during the war are rapidly being replaced by rivalry for post-war economic advantage. As in the case of commodities, compromise

and coöperation are possible, but the path to their attainment is beset with pitfalls. Achievement of a sound basis for the post-war years is dependent upon mutual appreciation of each other's problems, and can only be hampered if either side insists that its position is the only one consonant with international economic welfare.

Mr. Hutchison presents these issues clearly and simply. While the book is addressed principally to a non-technical audience, it would repay reading by many economists who have not made a special study of the problems involved.

SAUL NELSON

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Principios de Economía sobre Estabilización Monetaria. By BRAULIO ALFAGEME. (Madrid: Aguado. 1944. Pp. 212. 20 ptas.)

So few economic studies reach us from Spain that the present volume must be conceded at least a scarcity value in this country. Unfortunately, there is little more to be said in its favor.

Its purpose is to illuminate the discussion of international plans for monetary stabilization by setting forth some of the essential principles of the problem. The first chapter summarizes in these words the static problem, or "essence," of money: "The essence of money is conventional and may be multiple. The precious metals constituted the only essence of a money that circulated for more than two thousand years. The credit mechanism, generally united to State intervention, and in some cases also gold, constitute the multiple essence of present-day money" (p. 30).

The second and third chapters are devoted to the problems of internal and external monetary stability. The second problem, however, largely boils down to the first, since a money with stable domestic purchasing power will also be stable externally, except for exchange variations "of the pendular or seasonal type, due to a lack of synchronization between the import and export curves" (p. 71). These pendular fluctuations are also of short duration, "currently less than a year," while exchange variations "due to inflationary or deflationary phenomena may cover periods of several years" (p. 70).

Fortunately, the prescription against either inflation or deflation is extremely simple. Let all monetary issues obey the simple rules of the "commercial loan" theory and internal stability will be assured automatically. "The money created through the central bank's rediscounts of bills with less than 90 days' maturity, originating in transactions among merchants and industrialists, does not produce either inflation or deflation because the increase of the means of payments has its counterpart in the purchase and sale transactions represented by the commercial documents" (p. 53). The author also quotes with finality in this respect the opinion of various experts, including that of Mr. Quesnay of the Bank of France, that: "A bank of issue should not create money except on the basis of truly economic operations, for the purchase of gold or foreign exchange, and for the discounting of commercial documents which must be limited to three months and provided with three signatures, or two with supplementary guarantee" (p. 94). The magic of

three months and *three* signatures solves all problems of monetary management and guarantees domestic monetary stability.

If these rules are not followed, borrowings from the Fund would be of no avail to cure the disequilibria originating in inflationary policies. The Fund's intervention should be limited to the smoothing out of the seasonal or "pendular" variations mentioned above. In view of the author's bland assertion that all deficits not due to inflationary policies have a maximum span of less than one year, the Fund's task should not be an insuperable one. The Fund's intervention is needed only because of the present maldistribution of gold and of the failure of a previous palliative to this situation, *i.e.*, the gold exchange standard.

Some modern ideas pierce through the fairly musty outline of the book when the rôle of gold in the monetary mechanism is discussed. On the other hand, the author envisages the possibility of a return to partial gold coin circulation and asserts somewhat gratuitously that, as a unit of account, "gold not only has been, but remains impossible to replace" (pp. 61-62). There is, in this connection, a brief, enthusiastic reference to our gold sterilization operations of 1936-37 and to the British Exchange Equalization Account, concluding with the view that "in both examples, the English and the American, one observes the conscious and planned destruction of the power of gold to create money. . . . Since then, even in those countries which call themselves 'off the gold system,' . . . the volume of circulation depends on the will of the Governments, not on the gold reserves. Gold has lost its malefice and has been converted into an innocuous riches . . ." (p. 47). Professor Fisher will also be glad to hear that his *"Stamp Script* . . . and *100% Money* . . . have been the basis of Roosevelt's monetary policy" (p. 85 n.).

The book concludes with a few remarks on Spain's monetary system and gives, in an appendix, a brief analysis of the Keynes plan and a Spanish translation of the Morgenthau plan, in its July 10, 1943, version.

Mr. Alfageme's book is by no means representative of the literature published on the subject in the Spanish language. Latin American readers especially can turn to the excellent selection of translated articles published in recent months by the *Trimestre Económico* of Mexico and to original studies of very high quality by such writers as Emilio G. Barreto, Carlos Lleras Restrepo, Raúl Prebisch, Victor L. Urquidi, the Uruguayan delegation to Bretton Woods, and others.

ROBERT TRIFFIN

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World Politics Faces Economics. By HAROLD D. LASSWELL. A Research Study for the Committee for Econ. Development. (New York: McGraw-Hill. 1945. Pp. x, 108. $1.25.)

The author of this book sets himself the problem of determining what are the appropriate national and international economic policies for the United States to follow on the assumption that the pattern of post-war

world politics will evolve around the United States and Soviet Russia as the two dominant powers. The author quotes with approval the remark of Alexis de Tocqueville over a century ago that "each of them [Russia and the United States] seems marked out by the will of heaven to sway the destinies of half the globe."

According to the author there is no good reason to suppose that a bipolar pattern of world politics is peculiarly unstable, as compared, say, with a unipolar or pluripolar structure of international relations. Our present limited knowledge can only support the conclusion that all known patterns of world politics are unstable, and that "stability depends upon the harmony prevailing among many functions and institutions rather than upon the characteristics of any one political structure."

Under a bipolar structure of world politics, however, two focal points of political stress will be found to have a special significance in the evolution of the power balancing process of the two dominant powers. The first of these is the "enormous premium" put by the bipolar system upon the ideological integration of states, because even where natural resources and technology are approximately equal, the fighting potential of states can be limited from within by playing upon racial, religious, and economic cleavages. The second point is that the course of development in the small and middle states between the two dominant powers will have a large effect on world security. They can be areas of workable coöperation between the dominant powers; or they can be an unstable no-man's land in which the policies and actions of the dominant powers or their nationals incite to feelings of suspicion and insecurity.

International politics and national economic policy are interrelated and profoundly affect each other. In the past, wars may often have stimulated the expansion of commerce and industry on a private enterprise basis, but this has ceased to be true with the advent of total war. Small wars, or cheap wars, are things of the past. In the future all clashes, however small in origin, are likely to involve everyone and to be world-wide in their ultimate effects upon the world's power system. If war prevails, or even if the expectation of violence is prominent, private enterprise will be curbed and progressively discarded. The attainment of the ideals of high levels of employment, well-being, and freedom, requires a world frame-work of security and mutual confidence in the desirability and possibility of peace, abundance, and self-respect.

On the other hand, the behavior of national economic systems may, in turn, create world insecurity and foster international distrust and friction. The American economy, in particular, is a source of erratic change and its impact upon the rest of the world may stir profound social unrest and sharpen feelings of international insecurity. Within limits, however, it may be possible to keep the United States economy from operating in this way and thus remove one prominent source of world insecurity. An important part of Mr. Lasswell's book is devoted to examining the requirements of such a policy ("preventive politics").

The American economy is described as an "export-surplus economy"—

dynamic, changeable and expansive in its leading characteristics. The author expects that in the future we will continue to trade and invest in all directions without territorial limitations. He considers, but ultimately rejects, the idea that we should consciously pursue a policy of autarchy, even on an expanded territorial basis, such as all or part of the Western hemisphere, or various territorial combinations embracing Atlantic and Pacific areas. The problem then remains how to reduce any possible deleterious consequences of such a policy from the point of view of national and world security.

Two general recommendations are made. The first of these is that we should seek to stabilize our national economic life and thereby reduce the insecurities and frustrations engendered by the erratic performance of the American economy. This proposition is not further developed by the author, presumably because its desirability is generally recognized, even apart from the benefits in international security.

The second recommendation is that the United States should aim in its external economic relations at promoting "balanced industrialization" abroad. On this point the book becomes quite detailed and specific. By "balanced industrialization" is meant a process whereby the benefits of industrialization will, from the outset, be widely shared among the population affected, in contrast to "unbalanced industrialization" in which a privileged few are permitted to aggrandize themselves without substantially improving the status of the rest of the community. Balanced industrialization will promote the development of a middle class, hold social discriminations to a minimum and result in the growth of a relatively unified and free society imbued with an ideology of individualism.

Unbalanced or predatory industrialization, on the other hand, will jeopardize our friendly relations with Russia and enhance international insecurity. In this case the social unrest of the masses of the people—unavoidable to a certain extent under the most favorable conditions of industrialization—will cause the ruling class to live in fear of revolution and to look with hostility upon Soviet Russia as a source of danger in inciting its masses. Russia, in turn, will react to the existence of such governments with an increased sense of insecurity and will feel itself being encircled. It will seek to restore the balance by active propaganda and diplomatic measures to widen the gap between such hostile governments and their own peoples and play upon all grievances of a racial, colonial, and economic character. Under such conditions China, India, Japan, and Near East and other territories will become breeding grounds of friction and suspicion in Soviet-American relations. Moreover, as long as Russian suspicions of encirclement are fed by economic developments of the type described above, there will be small chance for success in loosening the grip of totalitarian controls within Russia and in strengthening its democratic and pluralizing tendencies.

The specific principles and methods to be followed in promoting balanced, rather than unbalanced, industrialization abroad, are spelled out in a separate chapter. Various suggestions by the author will be familiar to those specially interested in the future course of American foreign investments, and space limitation precludes any detailed analysis of his recommendations. The

primary value of Mr. Lasswell's contribution lies in the skill with which he relates his projected program for trade and investment to the requirements of the prospective framework of international politics. His list of principles and methods furnishes an interesting check list against the policies now evolving in Washington in the field of international economics.

The book is written in a rather unusual form, consisting of a series of propositions with explanatory comments and analysis. The material is for the most part tightly packed together and repays close study and re-reading. Not the least attractive aspect of the author's recommendations is that they make good sense even without taking account of the contribution they might make to better Russo-American relations.

Max Gideonse

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Public Control of Business; Public Administration; National Defense

Big Democracy. By Paul H. Appleby. (New York: Knopf. 1945. Pp. ix, 197. $2.75.)

What kind of decisions can an agency head make? Why are there so many clearances required in a government agency? Why don't officials draft the letters they sign? These are some of the questions that concern Paul H. Appleby in *Big Democracy*. To a fellow bureaucrat, the answers are not new, yet illuminating. It is revealing to follow a carefully worked-out exposition of the corporate nature of departmental decisions and to see the implicit assumptions on which most government work moves forward made articulate and coherent. For example: Because a Cabinet member's decisions are not personal, he cannot act as he would in deciding a personal matter, and his department must so function that the issues and recommendations presented to him are in themselves the result of corporate rather than of individual action. Hence, the inability and refusal of any successful agency head to make decisions offhand as matters chance to come to him from persons from outside his agency—hence, the need for careful and consistent internal clearance.

All this—and much more—is, as I have said, not new to fellow laborers in the vineyard though its elucidation is not common; but it is difficult for them to say how astonishing these conclusions will be to the lay public. The book is an answer, and a solid answer, to many of the current myths about the nature of government operations. It boldly defends the necessity for red tape. It flatly denies—with reasons—the charge that bureaucrats are power-hungry. How convincing these answers will be to the general public, I, for one, do not know, and particularly so because *Big Democracy* tends to assume that the myths arise and flourish from mere ignorance and naïveté.

Actually in an important way, the myths, however naïve in origin, are fostered with care by persons who believe or feel that derogation of the federal government is profitable to themselves, directly or indirectly.

In one other respect, *Big Democracy* presents a problem to the reader. It hesitates in its approach; at times it seems to aim at a college audience eager for numbered categories adaptable to easy note-taking, while elsewhere it addresses itself to the general reader, curious about how his government works, and willing to follow a consecutive development of the theme.

I have no wish to deprive another future group of college students of another lecture series in which Mr. Appleby gives them a sense of the reality of the problems they study. But I can express the hope that his next book is less closely tied to the classroom and more exclusively aimed at that oddly large group who have never studied political economy nor worked for the government.

On pages 160 to 163 of *Big Democracy,* Mr. Appleby quotes at length from an admirable speech of Speaker Rayburn on the functions of the Congress. It is a speech that would promptly be attacked as revolutionary if made by almost anyone but the Speaker of the House. There—I suggest—is an appropriate theme for the next epistle, and few men in or out of the government are in a better position than Mr. Appleby to treat the theme with the understanding it deserves.

HAROLD STEIN

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Industrial Organization; Price and Production Policies; Business Methods

The Economics of the Pacific Coast Petroleum Industry. Part 2. *Price Behavior and Competition.* By JOE S. BAIN. (Berkeley and Los Angeles: Univ. of California Press. 1945. Pp. xv, 438. $6.00.)

Part 1 of Professor Bain's study on Market Structure appeared in 1944, and Part 2, as summarized by the author, "deals with the measurement and evaluation of price results throughout the industry; the history of competition and cooperation; and the connections among price results, competition, and market structure." While there is an introductory story of the earlier years of the California oil industry, the study is devoted almost entirely to the period 1929 to 1940; and this period is divided into the depression period from 1929 to 1933, the "controlled" recovery period of the N.R.A. from 1933 to 1935, and the period of general but not steady recovery from 1935 to 1940.

It is difficult to summarize the complex mass of facts and conclusions presented here, but, following the author's outline, we may begin with the crude market. In this market in 1940 there were seven "major" producing companies, and 1226 "minor" companies, each group producing about 50 per cent of the crude oil. The majors refined their own crude and bought 60 to 65

per cent of the crude sold by the minors, the rest going to some 60 independent refiners and skimming plants, or into export markets. During most of the period outlined there was excess production of crude, which the majors tried in various ways to curtail, most of the time under federal supervision, represented by the N.R.A., the Federal Oil Conservation Board and the Bureau of Mines. Crude prices, as set by the Standard Oil Company, in a scheme of price leadership which the other majors followed, were maintained at a level higher than in other oil producing areas, but not high enough to permit imports from the flush Texas production.

According to the author, the majors wanted high crude prices because they made most of their profits in crude production. This is, of course, at variance with major policies in many producing fields, for the majors who buy some of their oil from independents, are not usually accused of wanting to pay too much. Since the majors are everywhere integrated, the imputed price of their own crude would appear to be a matter of indifference to them, while they would profit from buying the minor production as cheaply as possible. At any rate, Professor Bain finds the California majors making most of their profits in production, whereas the T.N.E.C. figures for the country as a whole reveal modest earnings in crude production, with much higher earnings in refining and transportation.

Transportation is less important in California than in other fields; yet, since most of the tankers and nearly all the longer pipe lines are owned and controlled by the majors, and are operated as private carriers, they buttress the power of the majors. Non-integrated refiners must be near producing fields. There are complicated relationships among the Los Angeles, San Francisco and San Joaquin Valley markets, but Los Angeles is generally the basing point for both crude and refined products, and in the Valley and Coastal areas the majors constitute a buyers' oligopoly.

In the wholesale market for refined products, the author finds three types of price discrimination. In the first place, there was discrimination among various refined products not according to cost calculations but according to their demand elasticities. In the second place, in meeting the price competition of minors, the majors sold "third" grade gasoline at price differences which did not match differences in cost. In the third place, the majors, largely the Standard Oil Company, fixed export prices, particularly of Diesel fuel, below the domestic level. With excess production of crude, they used the export market to dispose of the surplus, and so kept the domestic market "stable." In the wholesale market, as in the crude market, there was price leadership, unstable because of intermittent minor competition. Professor Bain finds refinery operations not always profitable, with minor failures common; yet there were some new entries in profitable years. As in industry generally, the major producers have tried to avoid price competition and instead have followed extensive programs of product differentiation.

In the service station business, the majors have resorted to various means to prevent price competition. They have subsidized service stations in various

ways, have encouraged the proliferation of stations in order to increase sales, have set extravagant standards of service and have spent considerable sums advertising their differentiated brands. In all this, however, they merely follow the tradition of most American businesses. The T.N.E.C. found the service station business operated at a heavy loss, and Professor Bain concludes that the Pacific Coast stations at any rate make no profit, and probably suffer net losses. Average gross profits of service stations varied from $147 a month in Washington to $231 in California.

The general picture, then, is one of an oligopoly, the oligopolists keenly aware of rivals' reactions, operating under government supervision in crude production, with several attempts to establish monopoly in the sale of gasoline, one of them organized under the N.R.A. It is a picture of powerful integrated companies, troubled by occasional floods of excess crude at home or in other producing fields, and by the erratic competition of weak and inefficient minor refineries and skimming plants, trying to maintain stability in a rather persistently unstable business. The majors have kept independent jobbers out of the business, but they have followed a "live and let live" policy with respect to minor refiners. Professor Bain summarizes their general behavior as "far from socially reprehensible."

This seems to the reviewer to be a fair judgment. It is perhaps true that in some respects the oil majors are treated with undue leniency in this book. The plea of *nolo contendere* to the antitrust indictment, for instance, leaves a rather strong presumption of guilt; but limiting output and maintaining prices in the oil industry are not necessarily contrary to the public interest. It is the theory of the reviewer that oil production has almost always been too high, and prices too low, to effect due conservation of this irreplaceable resource. In many respects the oil industry is a natural monopoly, and should be recognized as such. A more reprehensible policy has been that of exporting oil at prices below the domestic level, in order to maintain domestic prices. This is not conservation, but is merely imposing on domestic consumers a part of the cost of oil and oil products exported—some of them to Japan. Here a little indignation might have been justified.

One of the valuable services Professor Bain has rendered us is that of presenting the price policies of the California majors as they look to the men in the business, and as they have developed in response to problems actually faced in business. Using the facts presented here, a prosecutor might easily have drawn up a rather extended indictment of the oil majors; but we have many such indictments, and it is well that we have this more sympathetic and understanding analysis. The book might have been condensed considerably without great loss, and it might have been organized to make the conclusions stand out more clearly; but it is a very valuable contribution. In its departure from the traditional anti-monopoly analysis it represents an approach which is needed.

University of Kansas JOHN ISE

Mining; Manufacturing; Construction

American Chemical Industry: A History—1912-1922. By WILLIAMS HAYNES. Vol. II and III. (New York: Nostrand. 1945. Pp. xliii, 440; 606. $8.00 per vol.)

The late Francis P. Garvan, one-time president of the Chemical Foundation, is often credited with the remark that all America got out of World War I was its organic chemical industry. Whether or not one agrees with this view, it would be a mistake to suppose that we did not have a well-established domestic chemical industry in the period just ahead of the First World War. As a matter of fact, the manufacture of chemicals in the United States has developed from roots firmly planted in the earliest commercial enterprises of our colonial days, and that is a story the author proposes to tell in Volume I of this work, as yet unpublished. The thinning ranks of those who participated in the spectacular growth of the industry during World War I, from whom first-hand information could be had, impelled Mr. Haynes to publish first Volumes II and III, covering the period 1912 to 1922. Ultimately, there are to be five volumes of the history in all.

Williams Haynes is well known in the field of chemical economics, and was for many years the publisher of the trade magazine *Chemical Industries.* He is the author of a number of books, mostly in popular vein, such as *The Stone That Burns,* and *This Chemical Age.* The complete history of the events and the possibilities which combined to give chemical independence to this country has never before been written. To recount the growth of the chemical industry is a complicated matter, but the author unravels this difficult story with great skill. He possesses a clear and interesting style, which makes for enjoyable as well as informative reading. While he has written primarily economic and industrial history, due attention is given to concurrent technological advances. At the same time the author achieves in large measure a correlation of the development of chemical manufacturing and merchandising with the economic development of the country, and a setting of the chemical industry against the contemporary political and social background.

Briefly, the plan of the present two volumes is to deal first with the pre-war status of the industry as a whole and the impact of events leading up to our entry into the war. Then each of the important segments of the industry is treated separately, in terms of individual chemical raw materials and products, for the entire period under consideration. The closing chapters again pull the story together by telling the effects of the war on the industry, its relations with the government, and its new importance to the rest of the economy.

The chemical industry is one whose activities are far-flung and complex, but it is neverthless an integrated industry to an extent seldom realized. Its technology undergoes rapid and continuous change, obsolescence and amortization rates are high. The disappearance of an apparently stable source of raw material, or an unanticipated increased consumption of any one product, can dislocate the whole pattern of production. This lesson was

driven home during World War I, and the recent conflict taught it to a new generation all over again.

In 1912, the importance of a strong chemical industry to our economy and national security was not as well understood as it is today. The industry was comparatively small and simple in its organization, most plants being still family-owned. The Underwood Tariff act of 1913, which was based upon Democratic Party principles of a tariff for revenue only, created difficulties for the growing industry because of the uninformed and illogical manner in which it handled chemical rates. Chemical raw materials, previously on the free list, were made dutiable, while at the same time lower rates were provided for imported finished products made from identical raw materials. This handicapped American manufacturers competing with European chemical makers who were commonly organized into cartels, selling syndicates and trusts. The depressing influence of this tariff was virtually nullified by the outbreak of war in Europe ten months after its passage. The tremendous eventual wartime demand for chemicals, of which a curious lack of perception existed in 1914, and the blockade of Germany by the Allies, started the domestic industry on its way to wartime expansion.

The other big difficulty which had confronted the industry was the concentrated efforts of German chemical producers to prevent its growth. Backed by the German government, and by well-organized commercial representatives in this country, the Germans had, both for commercial reasons and in preparation for the coming war, done everything in their power to keep America in a subordinate position chemically. The German potash producers and the dye cartel resorted to every competitive trick—cut prices, commercial bribery, and full-line forcing—to prevent anyone in this country from acquiring practical manufacturing experience or conducting profitable operations. They assisted in obtaining favorable tariffs and in disseminating propaganda that American technologists could never catch up with Germans. The liberal provisions of our patent law permitting claims to chemical compounds were utilized to prevent production in the United States of valuable dyes, drugs and organic chemicals, making our dependence upon Germany complete. The war forced the entry of the United States into organic chemical manufacture, and the subsequent seizure of German patents by the Alien Property Custodian freed us from German domination and laid the foundation of a new industry.

As war drew closer, advocates of preparedness became more vocal; and there began to be official recognition that industrial mobilization would be necessary. A Council of National Defense was set up, and various committees were created. Chemicals played a part in the awakening educational process, but as the author points out, it took an amazing time for the idea of total war to penetrate. For the first time chemicals became news, our shortages of dyes and medicinals, and our dependence upon Chile for nitrates were dramatic lessons of the compelling influence of war upon industry. The War Industries Board was organized under Bernard Baruch, of whom the author is a strong admirer. There are many interesting parallels between the career of the Board and that of the late War Production Board, the type of

problems and the methods used to solve them. To a greater extent than WPB, Baruch depended upon voluntary coöperation of private industry with as few controls as possible, chiefly of raw materials.

The chapters dealing with individual chemicals run the entire gamut of the industry, embracing such basic materials as nitrogen, potash, phosphates, sulfur, coal tar crudes, ferro-alloys, minerals, naval stores, crude drugs, alkalies and acids, pigments and colors, insecticides, alcohol and other solvents, compressed gases, explosives, dyes, medicinals, perfumes, and other organic chemicals. Each of these is really the history of a separate industry, and many make fascinating reading, their interrelationships being well brought out, together with a liberal education in the peculiarities of chemical economics.

When the war ended, the industry was faced with excess capacity and stocks of chemicals. Many war-born companies went out of business. But within a short time, this period of distress gave way before increased demands for chemicals resulting from new industries such as rayon, plastics and lacquers, and from a phenomenon which the author calls the "chemicalization of industry," involving the greater use of chemical methods in older established manufacturing processes. The war also brought changes in the structure of the chemical industry from family to corporate ownership. Methods of sales and distribution underwent a transformation, the old sales agents being replaced by company sales staffs, with emphasis on technical sales service. The value of products of the industry had risen from $117,000,000 in 1910 to $574,141,000 in 1919, and in 1921 was still $390,768,000. No other American industry had grown more rapidly, and its new size and strength gave assurance that the modern American chemical industry had arrived to stay.

Mr. Haynes is objective and fair in his treatment of both government and industry, but understandably leaning somewhat in favor of the latter, of which he is seldom critical. He seems to feel that the government treated the industry harshly after World War I in the matter of contract termination and the disposal of surplus plants and chemicals. He also does not hesitate to point out instances of military shortsightedness in connection with the war effort.

The author's economic philosophy as it is reflected in his narrative appears to be set forth in his chapter on The Industry and The Government, in Volume III. He takes his place with those who advocate free private enterprise, with a minimum of governmental control and interference. His tariff views are those of a strong protectionist rather than a free trader. With some relish, Mr. Haynes cites an article by Dr. Taussig in the *Quarterly Journal of Economics* for November, 1922, in which that eminent economist stated it as his opinion, based on experiences as Chairman of the Tariff Commission, that the coal tar chemical industry did not seem to be adapted to American ways, that the American people probably would do better to turn to other things and get their dyestuffs from Germany, with no substantial tariff. Mr. Haynes believes that the high protective rates of the Fordney-McCumber tariff of 1922 saved the lives of our war-born chemical industries in the face of ruthless German competition.

In describing the post-war trend toward mergers and consolidations within the industry, leading to formation of a few big companies and the disappearance of many small concerns, the author tends to treat these as merely normal business developments, rather than as representing tendencies toward monopolistic concentrations of economic power.

The text does not attempt to tell the story of every chemical enterprise in the United States from 1912 to 1922. The growth of the chief firms, trade associations, and trade publications is traced. The prominent personalities of the industry during that period are pictured in the illustrative plates with which the history is provided in profusion, and their accomplishments are told in the text and in interesting biographical footnotes. At the end of each chapter there is a table of references cited numerically in the preceding pages, and a good bibliography at the end of Volume II. A useful feature is a chemical chronology in Volume II which correlates general business, chemical industrial, technical-scientific, and contemporary political events annually from 1912 to 1922. Each volume includes a series of appendixes containing statistical facts and figures, prices, and miscellaneous documents of biographical and historical interest. The books are remarkably free from errors.

Williams Haynes has made a contribution to American economic history that will stand for a long time. It is to be hoped that the remaining volumes of the history will soon be forthcoming.

HUGO E. WEISBERGER

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Transportation; Communication; Public Utilities

The Use and Disposition of Ships and Shipyards at the End of World War II: A Report Prepared for the United States Navy Department and the United States Maritime Commission by the Graduate School of Business Administration, Harvard University. (Washington: Government Printing Office. 1945. Pp. xiii, 325.)

Because of its importance in connection with the future national security of the United States, and with the strength and efficiency of the shipping and shipbuilding industries, the method of disposal of the great war-built merchant fleet of this country emerges as a primary post-war consideration. This report, prepared by James W. Culliton, Harvey P. Bishop, James M. Knox, and Paul F. Lawler, of the research staff of the Harvard Business School, after a thorough canvass of the facts and of the opinions of maritime leaders in government and private life, provides the best organized review of the American shipping problem to appear in a long time. Although focusing on the disposal of ships and shipyards, the writers necessarily had to consider to a considerable extent long-run merchant marine policy, and the report therefore has considerable scope. The document has also provided a foundation for the arguments leading up to the Ship Sales act of 1946—the most recent

piece of major shipping legislation in the United States. Although differing in many details, this act follows the Harvard recommendations in broad outline. The report therefore deserves close scrutiny by economists interested in transportation, foreign trade problems, and shipbuilding.

The report endeavors to solve two problems. The first is that of the disposal of the huge merchant fleet now owned by the government as a result of World War II construction. This country built some 6,000 vessels, totalling about 58,000,000 deadweight tons. While many of these ships have been lost or otherwise disposed of, the number of vessels remaining is staggering, and is far in excess of normal American ship requirements. The British and Canadian ship disposal problems are puny by comparison. We are therefore dealing with already created capital resources, and the question becomes how to deal with them to best advantage. The second problem, which is closely related to the first, is that of integrating ship and shipyard disposal with national merchant marine policy as expressed in the Merchant Marine act of 1936. The suggested solutions of these problems in the report are ingenious.

The recommendations depend on certain guiding principles. The national defense argument for shipping, commonly treated as a subordinate matter by most economists, is the core. It is assumed that major wars involving the United States directly or indirectly are a continued possibility. In such wars the requirements for merchant ships will doubtless be enormous. It is noted that, despite the prodigious volume of merchant tonnage built in World War II, which tonnage in 1943 alone exceeded that produced in the United States from 1914 through 1938, the supply of vessels was inadequate to meet all needs, and the shortage at times even threatened the loss of the war. This wartime expansion of shipping and shipbuilding was, furthermore, extremely costly. The problem is therefore to fashion an integrated merchant marine and ship and shipyard disposal policy designed to provide at reasonable cost for the national security over cycles of peace and war.

This report thus clearly recognizes the great dilemma which today faces shipping economists. It is that the gap between national peacetime and wartime ship requirements has now become so great that it is difficult to see how any satisfactory compromise can be found between the positions of those who argue for national maritime industries adequate for defense, and those who are concerned to promote more free international economic relations.

In dealing with ship disposal there appear to be two broad alternatives. The first is to liquidate the surplus over a moderately short period by selling vessels freely at necessarily low prices to all comers, domestic and foreign, for both operation and scrapping. This policy would permit the war-built fleet to serve current world freighting needs to a substantial extent, would lower freight rates, would considerably assist foreign operators in securing tonnage, and would make large-scale ship construction unnecessary for some time. It would be a recognition of the surplus for what it is. On the other hand, it would tend to break down the position of the American chosen instruments, would fail to provide a strategic reserve in the United States, would upset existing

subsidy policies, and, most important of all, would make the attainment of national security more difficult. Such a scheme the authors would reject.

They are indeed quite critical of government policies following World War I. These failed to provide adequately for the transfer of war tonnage to American operators and for the support of such firms. In an appendix, which provides an excellent review of the ship market and ship disposal policy at that time, it is pointed out that vessels were not sold promptly while the market was good; that there was no firm ship sales policy, with the result that buyers were wary; that there was a totally inadequate subsidy policy and little prospect of vessel replacement; and finally that a concept of a strategic reserve was lacking. By 1922 ship prices had fallen to low levels, at which ships were sold sporadically for operation and scrapping. They were to go still lower. The World War I fleet did, indeed, supply a cheap reservoir from which the operators continuously drew vessels, but because of the absence of a strong shipping policy prior to 1936, such sales were merely a means of keeping in operation foreign-trade and coastwise services yearly becoming more obsolete and hopeless. The great World War I fleet was thus frittered away.

The report favors the second alternative, which is the planning of ship and shipyard disposal on the basis of long-run merchant marine policy, coupled with the establishment and sterilization of a large reserve in both industries. With respect to shipping the report proposes measures to reëquip the entire foreign- and domestic-trade merchant fleet with modern, fast, highly-efficient vessels of the standard C4, C3, C2, C1, and Victory types, of which there is an ample supply, and in some cases with special types from new construction. This end is to be accomplished by selling such ships now in the government fleet to American operators at roughly world market prices less depreciation, which world prices are taken to be post-war foreign construction costs, and by maintaining adequate operating differential subsidies. The maintenance of the operating subsidies of the Merchant Marine act of 1936 is considered to be important and to be a cheap means of effectively providing for national security. Gross payments without any allowance for recapture were only $11,000,000 in 1939. Post-war payments are put at from $20,000,000 to $25,000,000, covering from 175 to 200 ships. The necessity is also pointed out of selling ships promptly, of fully establishing the principle of private operation, and of having a firm price and sales formula. Vessels should be offered, first, to United States contract operators; second, to other American owners; third, to the reserve fleet, of which more later; and fourth, to foreign buyers. Interesting calculations of post-war demand are supplied.

The report is thus mainly concerned with the high-quality tonnage. Under favorable conditions American owners might buy nearly all of the vessels of this type available. Liberty ships, of which the writers estimate there will be about 2,400, are believed to be of little peacetime value. They are truly surplus, and should therefore be promptly made available at a low and uniform price to all buyers. T2 tankers should be handled likewise.

A novel feature is the proposal to create promptly two sterilized reserves

as a means of removing surplus vessels from the market and of providing cheaply for national security. The first, the strategic reserve, would consist of about 1,000 ships of assorted types useful in war, these craft to be maintained in good condition. The second, the residual reserve, would contain the remaining unsold ships, which would be kept in reduced maintenance.

This program, now substantially enacted, though with variations, has much to commend it. Capital may be expected to flow with some confidence into private shipping, yet for those vessels to be sold the government will receive a reasonable return. Means of replacement and modernization of such fleets are available under the Merchant Marine act of 1936. The surplus ships, of small value in peace but of great value in war, are to be in large measure preserved.

The shipbuilding program matches that for shipping. *Laissez-faire,* which would soon bring paralysis for some twenty years, must be avoided in the interest of national security. The industry must, therefore, be kept at a suitable level of activity by government aids and subsidies, and by careful disposal of excess plant. Considerable capacity should be kept on a standby basis by means of maintenance contracts with active yards.

There is little doubt that the proposals adequately fulfill the objectives of the authors. They burden foreigners in that the war-built, high-quality ships will appear on the seas under the American flag, rather than under foreign flags, and that the great mass of ships will not be dumped on the world market. The basic interests of American shipping and shipbuilding are in general safeguarded as well as appears possible.

One wonders, however, about the long-run implications. Will the comparative advantage of foreign owners increase as a result of the war, and thus put heavy pressure on American owners? Will there be strong countervailing subsidies and measures? Will the dollar exchange position of many foreign nations permit of large-scale patronage of American shipping? Finally, will not the coming revival of European shipbuilding produce in some ten years a serious oversupply of tonnage? But in this imperfect world the Harvard recommendations have much to commend them.

JOHN G. B. HUTCHINS

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Agriculture; Forestry; Fisheries

Agriculture in an Unstable Economy. By THEODORE W. SCHULTZ. A Research Study for the Committee for Econ. Development. (New York: McGraw-Hill. 1945. Pp. xix, 299. $2.75.)

Agriculture has struggled with its problems for more than two decades. The progress that has been made in the realization of their character and the means of solution become apparent when one compares the statements such as the Land-Grant College Committee report of 1927 with the analysis of this book. The earlier report implied we were in a passing stage of diffi-

culties which time would shortly cure. Here, however, is a penetrating analysis with recommendations. It should be required reading for those concerned with public problems. The discussion deals with price and income aspects of agriculture, and as the author distinctly states, not with relief or welfare aspects. It will be criticized for incompleteness by those who place major emphasis upon the latter.

The first part of the book outlines the prospective conditions faced by agriculture. On this the author is frankly pessimistic. Agriculture it is true is booming now, but the difficulties of the 1930's were due to underlying trends and may be expected to return with the decline in war and immediate post-war demands. Part Two develops the dominant factors in the long-run agricultural situation. These are an accelerating expansion of supply and a slowing down in the growth of demand. Add to this difficulty of movement out of agriculture, because of lack of economic opportunities and lack of knowledge, and the stage is set for continuing low income per farmer. A forward surge of farm technology is on and appears to be in its early stages. The result is that even with a greatly reduced number of farmers, we appear able to far exceed our domestic needs in output. This is coupled with the slowing down of the growth of demand. Population is, of course, increasing at a declining rate. What is more important, however, is that farm products have a low income elasticity. Dr. Schultz, after careful study, places it as low as .25 at the farm. Demands as a result will not increase as much as incomes rise and we face a long-run tendency toward excess agricultural output.

The usual cure for economic ills prescribed by the orthodox economist is to free economic forces from their restrictions and allow time for the situation to be rectified. Agriculture, according to Dr. Schultz, seems capable of working out a considerable share of its internal adjustments with reasonable dispatch and we should strive toward facilitating such adjustments. The paralyzing hand of parity prices, for example, should give way to free market prices to permit adjustments in output. The relationship with the remainder of the economy is quite another matter. A vigorous, growing and stable economy would in large part solve the problems of agriculture. Without it, these adjustments will require an unreasonable period of time. If during the first two decades after the war the annual rate of increase of nonagricultural output reaches 4 to 6 per cent, then Dr. Schultz estimates that this growth might make room for an annual expansion of agriculture around 2 per cent. But if business cycles continue, agriculture will continue to face distressing declines in demand during depressions and will need ameliorating measures.

Experience indicates we must expect cyclical fluctuations even if the long-run trend is favorable and depressions are shortened. Freer trade and better international relationships would, of course, improve export markets, but there seems to be no long-run solution to our domestic agricultural problems along these lines. One gathers that the author, while favoring a loosening of the impediments to economic forces which we have constructed, would not place too much reliance on this. In the foreseeable future, more than this is demanded in the way of an agricultural policy.

The author examines our past agricultural programs in his third section.

Thus far the programs have had serious faults. This is so apparent that even the South and the Congress appear to have developed doubts regarding them. Dr. Schultz selects as the two most important of the pre-war administrative techniques the acreage allotments and commodity loans. The attempts to curtail production by acreage reduction did succeed in reducing acreage but not production. They appear to have had no substantial effect on price or income. On the credit side, however, they appear to have contributed to soil conservation and better farming methods. The procedure of tying most of the AAA payments to acreage allotments resulted in the larger farms receiving proportionately larger payments and to some freezing of production patterns.

The commodity loan program seems generally to have erred in a definite drift toward too high loan values and an inflexibility because of the tying of the loan values to parity. Thus far the commodity loan program has not had to face the results to be normally expected from its present mode of operation. The present loan program began with the Commodity Credit Corporation in 1933. This agency in contrast with its ill-fated predecessor, the Federal Farm Board, was favored in its early years with a strong trend of rising prices. By 1940, however, accumulations of stocks had become great enough to presage disaster, but the unprecedented war demands provided a rescue.

The lessening latitude given the administrators in setting the loan rate has been striking. In the AAA act of 1933 the Secretary of Agriculture was given wide latitude in setting the loan rate. The 1938 act specified rates between 52 and 75 per cent of parity. The 1941 legislation made all loans mandatory at 85 per cent of parity. In 1942, the rates became 90 per cent of parity with some limited exceptions and the rates were to extend to the expiration of the two-year period beginning with the end of the January following the close of the war. This record does not discourage the author and he does not believe that the faulty programs of the past means that all government programs are bad. He holds that we may have vigorous and enterprising farms and at the same time equally vigorous if well designed government programs.

The last section of the book is devoted to Dr. Schultz's own program for improving the agricultural situation. To solve underemployment and low earnings in agriculture, it is, of course, necessary to move persons from farms. Things we should not do are fairly clear and include resettlement of veterans extensively on farms and increasing the number of so-called "subsistence farms." Positive measures are less easy to enumerate, but certainly involve the removal of barriers to movement. Monopolies and restrictions to entry in trades should be broken down. Among the positive measures the author makes an interesting suggestion for a National Outlook to serve labor similar to that developed for agriculture. Grants-in-aid for migration and enlarged facilities for training rural youth also appear warranted.

In so far as instability of agricultural income arises within agriculture, the solution seems to be at hand. A crop insurance program and storage of feed grains on public account to stabilize livestock production promises to do a great deal.

Diminishing income instability caused by fluctuations in demand are outside the power of internal adjustment of agricultural affairs. The first line of defense in stabilizing agricultural income would be the stabilization of the whole economy, probably through fiscal-monetary policy. Should this fail, then the author would advocate compensatory payments to farmers during the depression periods as the second line of defense. Farm prices would be left free to seek their own levels and perform their allotted functions with respect to allocating supplies. The author was among the early advocates of this approach to our price problems and has done much to bring about its acceptance as a general principle. These compensatory payments would be made to farmers to sustain their income without interfering with prices and their function. Payments might begin when unemployment or factory payrolls reached a certain level. The author suggests that they be made to provide a price equivalent amounting to about 85 per cent of some pre-depression level. Parity prices would be completely abandoned. Under such a policy the principal production adjustments would flow from relative prices. In addition, however, some aid might be given toward soil conservation, storage of feed crops, improvement of farm practices, improvement of tenure and aids to depressed areas. Adjustment aids are especially essential to the South.

In price policy, Dr. Schultz is the leading exponent of "forward prices" among the agricultural economists. The details of this part of his positive program are not entirely clear. Forward prices are, however, prices announced far enough in advance to enable farmers to develop their next production program in harmony with the announced prices. They should also be prices which will achieve a desired output, presumably desired by governmental experts after review of the prospects for the future. Nearly all agricultural economists will agree with the author that our system of parity and support prices is undesirable and dangerous, but there is a wide divergence of opinion on forward pricing.

WARREN C. WAITE

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Reconstruction of World Agriculture. By KARL BRANDT. (New York: Norton. 1945. Pp. viii, 416. $4.00.)

This book was written during the war, anticipating the task of rebuilding agriculture and reëstablishing a world economy. It was written in the belief that Germany, Italy, and Japan would be defeated, that the post-combat period of disorganization would be brief, that the food relief requirements for Europe would be moderate, that land reforms long overdue in Europe would be undertaken, and that an opportunity would present itself for the restoration of agriculture in a setting of world trade shaped along liberal lines. The book is packed with information, ideas, and insights about agriculture, especially European agriculture.

Dr. Brandt, drawing upon his rich experiences, has allowed himself to range widely. No American has at his fingertips so much detailed knowledge about Europe's land institutions, excess population on farms, the price-

making machinery serving agriculture, the political rôle of farm groups, and the state of the technology in agriculture as has Brandt. P. Lamartine Yates and D. Warriner have focused on the economics of the European peasant. Wilbert E. Moore, in his *Demography of Eastern and Southern Europe,* has given us a much needed analysis of the excess supply of labor on farms in eastern and southern Europe. Brandt, however, seeks a more comprehensive understanding, namely, the rôle of agriculture in a modern world economy. In his explorations he draws not only on his European background but also takes in his stride recent developments in nutrition, the technological advances in farming in countries with a highly developed agriculture, the lessons in food and agriculture drawn from the experiences of World War I, and the basic forces that were shaping world trade during the inter-war years.

Brandt starts with the effects of World War I and then sketches the trends of the twenties in which he includes Hoover's efforts at food relief, the agrarian reforms in eastern Europe, the gradual recovery of agriculture in Europe, the appearance of maladjustments in supply and demand, the decline in farm prices toward the end of the decade and its portent of depression, efforts at farm relief and market monopoly, and the failure of the monopolist approach along with much higher tariffs in the United States and autarchy in Germany. The analysis then shifts to the decade of the thirties, starting with the collapse of the credit structure, the spread of protectionism, the transition in Europe from the failure of peace to the preparation for war, New Deal farm policies, the cartelization of agriculture in Great Britain and Germany, and the added public control of the farm economy in other parts of Europe including the Soviet Union.

The impact of World War II on the food and agricultural economy and the prospects at the end of hostilities is then considered, which sets the stage for estimating the conditions in agriculture during demobilization. Because he expected the food relief requirements for Europe to be moderate, the task of the United Nations Relief and Rehabilitation Administration appeared to him comparatively easy. This discussion ends with the warning that America ". . . will be rudely shaken by the discovery that European agriculture is very competent and is a serious competitor with American agriculture in European markets." Recovery in agriculture is expected to come quickly; a vigorous, highly productive European agriculture will emerge soon after the end of the war after a brief relief period, as was the case following November, 1918. The outlook in 1946 is indeed not nearly so assuring.

There then follows what is probably the best part of the book, a treatment of the basic controversial issues in formulating a world agricultural policy. We are living in a century when people and governments are concerned about the welfare of farmers; the claims of importing countries for agricultural protectionism and the claims of agricultural exporting companies for special measures to dump and to engage in price discrimination in forcing supplies into export channels have been freely supported. The effects of industrial activity on agricultural progress is touched upon, and the importance of the division of labor between the temperate and tropical zones is stressed.

Brandt then introduces a very provocative topic; collective *versus* individual farming, reviewing very briefly the cultural history that has shaped, first, feudal society and later the small family farms in western Europe. The split in the socialist parties with regard to breaking up rich estates deserves much more attention than he has given it. In fact, this particular topic is of such basic importance that one hopes he will find time to enlarge and to prepare a modest monograph for our professional literature on the size and structure of farm units viewed in terms of the historical stages through which agriculture has passed, the institutions that have become established, and the goals that are appropriate to policy in this sphere. Brandt appears to make altogether too much of the idea that there are many people in farming who are so low in their capacity that large-scale farms are necessary to employ them. Certainly this a very short-run view, for much can be achieved through education, nutrition and other welfare measures to enhance the efficiency of such people and thus enlarge the productive rôle they can play in agriculture and in other occupations. The penetrating comments on agrarian feudalism in Germany, Hungary, Poland, and Spain should be carefully studied by students of political institutions as well as those interested in agriculture.

Brandt then throws his weight for a reconsideration of world trade; freer trade is a basic prerequisite for the reconstruction of agriculture. He conceives this rebuilding in a liberal tradition and relates it to the foundations of political democracy and then turns to the necessity of an expanding economy in order to achieve a redistribution of the labor force to lessen the overpopulation of agriculture. There is also a need for the resumption of efforts for the improvement of nutrition but he holds that the prosperity of the agriculture of the world is dependent primarily upon European political stability and industrial recovery.

Planning with regard to agriculture is viewed by Brandt largely as a threat rather than a promise. Planning takes on all of the adverse political connotations that Hayek has ascribed to it. It "means that all economic affairs are subject to political decisions. . . . Under agricultural planning, as it is executed today, for example in the U.S. . . . it is decided by vote in both houses of Congress. When Congress thus acts it is planning." This book is devoted to policy objectives—policies which will shape the use of resources, the channels of trade, and the functioning of the price system. Such policies, if they are to have expression, must also be decided by vote in both houses of Congress.

One might well wish that this book had been more condensed without losing any of its comprehensiveness, less detailed without losing its rich reality, less descriptive, leaving more room for the formulation of the main issues and analysis. There is also considerable repetition and inclusion of materials that are quite obvious to most readers. These shortcomings are, however, for the reader a small price to pay for the wealth of information and insight that this book encompasses.

THEODORE W. SCHULTZ

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USDA—Manager of American Agriculture. By FERDIE DEERING. (Norman: Univ. of Oklahoma Press. 1945. Pp. xvi, 213. $2.50.)

The genesis and purpose of Mr. Deering's book is explained in the Preface: "When I became editor of *The Farmer-Stockman* in 1942, I decided that I ought to know how the USDA was organized, how it operated, and what it did. So I started in to learn about it. The farther I went in my research, the less I understood the USDA, eventually arriving at the conclusion that no man living understands the complex setup. The observations contained herein grew out of that conclusion. . . . This book is an appeal for revaluation of our approach to the farm problems so that solutions may be found and for organization of the USDA on that basis" (pp. ix-x).

In the process of ascertaining what is wrong with the U. S. Department of Agriculture, Mr. Deering touches a great number of problems. Chapter 1 contains a generalized account of the activities of the department; criticism of the wartime organization and the 1945 reorganization of Secretary Anderson; plus a proposal for reorganization under three broad functions: (1) administration, (2) research and (3) education and information. Chapter 2 touches on the historical development of the Department and returns to recent organizational defects and the need to remedy them. Chapter 3 discusses the shortcomings of a number of specific programs, and gives special attention to the Agricultural Adjustment Administration and the Commodity Credit Corporation. Chapter 4 describes in rather sketchy fashion the work of the agencies within the Agricultural Research Administration. Chapter 5, entitled The Number One Problem, is devoted entirely to soil conservation. Chapter 6 is directed toward post-war problems, with some discussion of production control, price policy, and subsidies. Chapter 7 is devoted entirely to the farm credit problem. Chapter 8 begins with a discussion of the work of the agencies administering the regulatory laws and winds up with a number of proposals for reorganization of the administrative functions of the whole department. Chapter 9 is a catch-all for comments on the department's services in the fields of rural health, housing, electrification, roads, public lands, and coöperative associations. Chapter 10, entitled Education and Information, is another omnibus chapter referring to the work of the Office of Information, the Extension Service, the Bureau of Agricultural Economics, the 4-H Clubs, and agricultural education generally. Chapter 11, entitled The New USDA, returns once more to the theme of general reorganization; while Chapter 12, Tomorrow's Agriculture, contains the author's ideas on a number of problems of economic policy, including production adjustment and prices.

There are a lot of things about the Department of Agriculture that Mr. Deering does not like. He does not like the way it is organized in Washington, where it threshes about "like the proverbial bull in a china shop and then, following the example of the famous knight of literature, leaps on his horse and dashes off in every direction" (pp. 13-14). He does not, for a large number of reasons, like its organization in the field. He does not like what he calls the "dollar-minded" point of view of the department—a tendency "to think of farm production only in terms of statistics and dollars and cents" (p. 122). He does not like the bulk of its activities in the fields of production

and prices. Although he does not specifically charge the department with any substantial abridgement of freedom of action by the individual farmer, there is a tone of apprehension in this regard. The following statement is an example: "The power of directive has been exercised freely in regard to agriculture; and in the hands of unscrupulous or power-hungry officials, the vast powers held by the department could be used to divest farmers of virtually all control over their commodities" (p. 58).

In short, it seems fair to say that Mr. Deering views the Department of Agriculture as a mixture of bad organization, bad administration and bad economics. There can be no doubt that the Department of Agriculture, as well as some other departments of the federal government, has many deficiencies. These are quite generally recognized and are of great concern to all who have considered the problems of government, including a large proportion of the bureaucrats themselves. However, Mr. Deering's book adds but little to our ability to deal with these deficiencies. Instead of following through with an independent and thoughtful analysis of the large amount of material which he has so industriously gathered, he largely confines himself to repeating a lot of generalized criticisms, most of them of the familiar anti-bureaucratic variety. The whole book abounds in statements that one would like to rebut or at least tone down. However, comment will have to be confined to a few selected items.

Mr. Deering argues at the outset that no man living understands the USDA. This statement has considerable truth, but other attempts show that it is possible to come much closer than he. The careful study of John N. Gaus and Leon O. Wolcott, *Public Administration and the United States Department of Agriculture*, published in 1940, is only one example. In this connection, it may be noted that the staff functions of the department, which are so important in obtaining coördination, and were particularly emphasized by these authors, are completely overlooked. Under Deering's reorganization, the staff agencies appear either to be eliminated or consolidated into one of the three super-divisions, with unification within and among them apparently being effected by some sort of magic. Another striking feature is a tendency to regard the department as entirely a service agency for farmers. It is true that this is a large and vital phase of the department's work, but the department is also a public agency and faces the problem of integrating its efforts to aid agriculture with the requirements of the public interest. This important problem gets no attention whatever.

In attempting to understand and appraise operations of the Department of Agriculture, and to produce a brief and readable book, Mr. Deering undertook a most formidable and commendable task. It is regrettable that the readable book which he has written contributes so little toward either an understanding or a solution of the problems to which he addressed himself, particularly in view of the fact that he is in a position to reach and influence a large number of farm people who have a vital stake in the successful operation of the USDA.

J. P. CAVIN

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Labor and Industrial Relations

Negro Labor: A National Problem. By ROBERT C. WEAVER. (New York: Harcourt Brace. 1946. Pp. xiv, 329. $3.00.)

The subject matter of this volume is the effect of World War II upon the employment opportunities available to Negro workers. To provide the proper background the author sketches briefly the employment history of the Negro worker prior to the defense emergency, showing the racial employment patterns that prevailed and the obstacles that confronted Negroes in their quest for desirable jobs. Under the stress of the defense emergency and then all-out war, the color bar slowly gave way, especially in areas of acute labor shortage, with a long-delayed measure of racial justice a desirable by-product.

As the Office of Production Management official in charge of Negro training and employment, and later as director of Negro Manpower Service for the War Manpower Commission, Dr. Weaver participated actively in governmental efforts to promote effective utilization of Negro labor in war industry. He has brought to this study, along with his excellent background, a wealth of detailed information on Negro employment in a variety of industrial areas. He has not allowed his sympathy for the black worker denied opportunity for employment or advancement by a color occupational system, nor his indignation at the prejudices both of management and white labor, to interfere with an objective analysis of the problem of Negro employment in the war and post-war periods. The careful marshaling of factual material, the dispassionate account of prejudice and injustice, speak with their own eloquence.

World War I gave American Negroes their first opportunity on a large scale to enter industrial employment. Though that period marked a significant gain for colored workers, the occupational color-caste system remained unchanged in that Negroes were still restricted, with rare exceptions, to the unskilled jobs in hot, heavy, and dirty industries. Management thought in terms of Negro jobs and white jobs, white workers feared the Negro as a competitor for a limited volume of employment, and craft unions frequently discriminated against colored workers. Their entrance into certain northern industries via the strikebreaking route further intensified the prejudices of white workers against Negroes.

Between 1940 and 1945, however, and especially after 1942 when acute labor shortages became apparent, changes of tremendous significance occurred. With white workers no longer available, factories hired Negroes for production jobs, and upgraded qualified colored workers from the ranks of the unskilled to semi-skilled and skilled grades. Though they were hampered by inadequate vocational training opportunities, by the fall of 1944 a million and a half Negroes were employed in war industries, about half of them in areas of acute labor stringency. As Negroes moved from rural to industrial areas, from south to north and west, they faced problems of urbanization, overcrowding and housing shortages, and insecurity once peace and reconversion reduced industry's need for them.

The areas and industries that Dr. Weaver considers at greatest length

are Detroit; aircraft throughout the country; and local transportation in Philadelphia, Los Angeles, and Chicago. In some of these cases management insisted upon the color bar, whereas elsewhere management wished to widen employment opportunities for Negroes but was held back by opposition of white employees. In extreme cases, as in Detroit, there were wildcat strikes against the upgrading of Negroes, strikes that the national heads of the union opposed with vigor and effectiveness. In Philadelphia the color issue became involved in a struggle between the CIO and the lineal descendant of a company union, which tied up transportation for almost a week in an effort to prevent the use of Negroes as motormen. Elsewhere the introduction of Negroes into new types of employment proceeded without incident, especially where management planned its actions carefully and the union leadership was sympathetic.

Regardless of how the transition to peacetime employment is handled, the Negro is certain to be among the chief sufferers. Almost half the Negroes in war industries, Dr. Weaver points out, were concentrated in aircraft, shipbuilding, and iron and steel (including ordnance), and large numbers were also employed in the production branches of the armed services and in government-owned plants. These branches of industry will offer relatively little opportunity for post-war employment. In addition, because the Negro was so recent an entrant into many plants his seniority standing is low. Should seniority provisions be modified to give him preferred treatment, the resulting enmity on the part of white workers would lead to a highly dangerous situation, particularly should we enter a period of widespread unemployment.

Though many of the employment gains registered by Negroes during the war will not survive, there will be a substantial residue of progress. In the iron and steel and the automobile industries, for example, the Negro has made numerical and occupational advancement, and in both these industries he exercises an important influence within union ranks. Even in those industries, such as shipbuilding and aircraft, from which the great bulk of Negroes, as of others, will be displaced, skills were acquired which may help colored workers obtain more desirable types of civilian employment.

The volume discusses at some length the formation and activities of the Fair Employment Practices Committee, which provided a mechanism for the processing and adjustment of complaints of discrimination, and which was instrumental in widening employment opportunities for Negroes. Dr. Weaver believes that there is a special need for FEPC in the reconversion period, that state FEPC's should be established for intrastate activities, and that there should be a permanent FEPC not restricted to war industries. He is pessimistic about the prospects for full employment, upon which the economic welfare of all workers, but especially of minority groups, so largely depends, and likewise about the prospects for racial understanding in the post-war period.

The author believes that a permanent FEPC, with powers of enforcement, can do much to sustain the morale of Negroes and their belief in American democracy. Its contribution would be significant, he thinks, if it merely

established equal employment opportunities for Negroes in federal employment and on public-financed construction. In a work-world in which unions are so important, he points out, colored workers must be oriented by the Negro community to understand unions and participate in their activities. Agencies that train and place Negroes must think realistically in terms of the industries, such as construction, in which the post-war demand for labor will increase. The federal government, besides providing for a permanent FEPC, can help best by achieving a smooth and quick reconversion and planning to assure full employment.

Dr. Weaver's volume deserves a wide reading. Its careful marshaling of facts, its competent analysis of complicated problems, and its objective treatment of an issue so highly charged with emotion and prejudice make it an important contribution to the literature on the subject of Negro labor. To some extent the chapter organization might have been improved, to eliminate a tendency toward repetition and to make the book more an integrated whole and less a collection of related essays. This, however, is a relatively minor criticism of an excellent piece of work.

JOEL SEIDMAN

Washington, D.C.

The Indian Working Class. By RADHAKAMAL MUKERJEE. (Bombay: Hind Kitabs. 1945. Pp. xvii, 336. Rs. 12-8.)

This little volume is deceptively slim, as it contains much more meat than its size might suggest. Professor Mukerjee has produced a thorough technical analysis of the multitude of grievances which beset Indian labor today. His pages are densely packed with illustrative data and with more than a hundred tables, detailing working and living conditions throughout Indian industry.

The presentation is organized by problems, taking up in order those major difficulties which industrial workers experience, from first recruitment or employment, through working conditions, working hours and wages, and standards of living and housing. The ramifications of each problem are thoroughly documented by factual material, both by geographical area and by industry. Special recurring attention is given to employment in coal mines and quarries, in tea gardens, in jute and other textile mills, and in iron and steel fabrication. The final chapters are devoted to more general discussion of India's needs for increased social security, trade unionism, and collective bargaining methods to assure industrial peace. Here, also, the author is quite as much scholar as advocate, tracing carefully the historical background and present status of each problem.

The book does not lend itself to review in the usual sense, as its very inclusiveness makes summary difficult. From his background of thirty-five years' experience with Indian labor problems Professor Mukerjee has reached conclusions as to what should be done about a wide variety of particular sore spots. Among the more important measures advocated are the elimination of the widespread contract system of hiring by middlemen, the in-

creased use of labor exchanges, recognition of changing costs of living in prevailing wages, and gradual establishment of minimum wages and maximum hours of work. In this latter connection, the author presents a great deal of valuable data on Indian standards of living, conveniently compared with those of other lands. One chapter is devoted to the problems of technological advance; and a plea is made for controlled introduction of more efficient processes, with some proportionate share of resulting profits being allocated to labor. An analysis of housing conditions culminates in an advocacy of a large-scale government housing program.

The guiding assumption of the study is that "Indian industry can advance only on the basis of a progressively higher scale of production, wages and standard of living. Industry cannot enjoy peace and prosperity so long as the elementary needs of the worker as a human being, and not merely an instrument of production remain unsatisfied. . . . The foundations of industrial . . . progress accordingly rest on increased efficiency and improved standard of living and social security for the working class and enlarged and adequately distributed purchasing power for the entire population."

The approach is essentially sociological, and reliance is placed upon the sheer impact of factual data, interpreted by common-sense reasoning, to support the various corrective measures indorsed. These generally reflect merely an application to particular Indian conditions of currently prevailing convictions of organized labor and "liberal" labor sociologists of the English-speaking world. It is to be regretted that serious economic analysis of the impacts of such individually "progressive" measures on a semi-competitive economy is so rarely undertaken. On the other hand, it must be conceded that the teeming, unstable complexity that is India hardly seems the simplest economy to which to begin applying such an analysis of repercussions.

The book is to be recommended to serious labor technicians rather than to a more general public. Even professional labor students who are fully conversant with current problems in occidental countries may find it wise to absorb this present volume by installments; for the repeated use of unfamiliar Indian terms and local industrial jargon (frequently unexplained) mark this study as intended primarily for those actively working on day-to-day problems of Indian labor. For such specialists it should prove a mine of information for ready reference, and a useful sociological summary of particular defects in policies and practices which prevail in Indian industry as of the end of the Second World War.

Omar B. Pancoast, Jr.

OMGUS,
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Seasonal Farm Labor in the United States. By Harry Schwartz. Stud. in hist. of Am. agric., no. 11. (New York: Columbia Univ. Press. 1945. Pp. xii, 172. $2.25.)

This little volume gives an instructive review of the situation faced by seasonal farm laborers on whom producers depend not only for the harvest of fruit crops but also for the production and harvest of many of the truck

crops of the Pacific Coast, the irrigated areas of the Great Plains, the humid acres of the Middle West, and the Atlantic Coast. Special attention is devoted to the problems surrounding the production of sugar beets, a crop which involves two comparatively short seasonal peaks.

Along with his own personal observations, the author gives a commendable review of reports of other investigators who have from time to time studied the problem of migrant seasonal workers. The descriptive matter is well supported with statistical evidence, showing the importance of seasonal labor in agricultural production and the level of earnings achieved by migratory workers in certain typical cases. Many of the earnings data are drawn from years when earnings in other phases of agriculture were likewise modest, so that correctly interpreting this evidence involves taking into account the general economic situation of the period.

The author makes an important point of the significance to the producer of harvest labor cost from a bargaining standpoint. He shows how producers have frequently curtailed the amounts they were willing to pay for labor at harvest time when the price outlook for the product was particularly discouraging. He does not follow this point up with evidence which would indicate whether or not the labor thus bargained for was any more or less profitable than that used at other times when bargaining was not so evident. The general impression given is that the employer has often been guilty of great injustice and unjustified discrimination against seasonal workers. One might reasonably inquire whether the fault lies with the employer or with an economy which requires the incurring of heavy costs in producing a crop the price of which remains an unknown quantity until harvest time and the perishable character of which precludes the possibility of storage and holding for any considerable period of time in anticipation of a more favorable market. Instances are given where producers chose to permit the crop to remain in the field rather than incur further costs in the face of an already impossible market situation. There are enumerated the various support programs which have been afforded producers in the sugar beet industry in particular, and the author wonders why some comparable program could not be forthcoming for the worker. This seems a reasonable question.

Available experiment station studies tend to show that labor earnings of producers in the case of many of these commodities, especially deciduous fruit crops and some truck crops, are, outside of certain large corporate interests, very modest indeed. The grower with his investment and his entire family's time devoted to the project has, on an average, realized little more than a laborer's earnings. For this meager reward these entrepreneurs have had to risk their capital and their year's effort for an uncertain prospect.

In the latter part of this report occurs a statement which indicates possible unfamiliarity with the factors involved in causing employers to adhere to a production program which provides only seasonal employment. The author comments: "Farmers would be hard to convince that it would be to their advantage to employ only certain workers and to modify their farm plan so as to give maximum employment." Difficulties encountered

in developing a farming system which provides year-round employment for workers on truck farms in western New York or strawberry and grape farms in northwest Arkansas are very real.

The author correctly identifies the chief difficulty in the pathway of "decasualization," which is, as he indicates, "the distribution of peak needs and non-peak needs." A more practicable proposal made by the author seems to be that of combining farm and non-farm employment for workers on whom producers of seasonal crops must depend. He indicates further that migration difficulties can be minimized by local urban populations responding to temporary need for additional farm help. He gives considerable attention to accomplishments in this direction in the past three or four years.

Consumers may have become so accustomed to prices for fruits and vegetables which provide very meager returns to both seasonal laborers and their employers that great resistance might be met in attempting to establish prices which would permit paying seasonal workers adequate *annual* incomes for only five to seven months' employment. No doubt the general public would be more interested in efforts to find productive employment for such seasonal workers in non-season periods. Thus the burden of providing adequate annual incomes to seasonal workers would not fall entirely on seasonal crops.

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Human Relations in Industry. By BURLEIGH B. GARDNER. (Chicago: Richard D. Irwin, Inc. 1945. Pp. xi, 307. $3.00.)

This is a significant book for economists specializing in industrial relations and personnel administration; but certain sections of it, particularly the first four chapters, deserve wider reading among economists generally. Professor Gardner's purpose is to provide a systematic presentation of the social structure of industry. He does an able job of describing the various groups and levels in the hierarchy from top management to workers in an enterprise, and he points out with many illustrations the pressures and conflicts that develop between these groups and levels. This view of the industrial organization should be a part of the intellectual equipment of every economist, even though he approaches the study of industry from a different point of view.

The book owes a heavy intellectual debt to the pioneer research studies by members of the Harvard Graduate School of Business Administration at the Hawthorne plant of the Western Electric Company. The author spent five years in charge of employee relations research in connection with the personnel counseling program at Western Electric, and he has drawn heavily on this experience, as well as on *Management and the Worker.*[1] In fact, readers who are familiar with this and other reports of the Hawthorne research will find little that is basically new in the present book. But the

[1] F. J. Roethlisberger and W. J. Dickson, *Management and the Worker.* (Cambridge, Harvard Univ. Press, 1940.)

material, with many new illustrations, is presented more briefly and in a livelier style than has heretofore been available.

It is the author's belief, shared by many others, that because a business firm "is such a closely integrated system of co-operative effort, it is important that everyone concerned with increasing its effectiveness, whether they be executives, personnel people, or supervisors, have an understanding of the nature of such a system and of the problems of maintaining effective co-operation within it."

To provide this understanding, Professor Gardner begins by describing the man-boss relationships that exist in a factory hierarchy, and the importance of status as attached to particular jobs. Then he considers the line of authority from top to bottom, and how, in practice, information is often distorted and filtered and how it moves "by fits and starts." Next, the functions and problems at each level in the hierarchy—foremen, department chiefs, division chiefs, superintendents, and top management—are described. The divisive influences that operate between these levels get particular attention, as do the cleavages between informal groups and between line, staff, and control organizations. There is a particularly interesting discussion of the conflicts between the engineers and the shop and between the accounting or cost control organization and the shop.

In unionized plants, the union is also an integral part of the social structure of the factory, as Professor Gardner points out. His chapter on "The Union: Its Functions and Place in the Structure," however, is rather brief and over-simplified, although suggestive of areas for further study. Some readers will question that "the chief function of the union is to force management to consider the effects of company policies and practices upon the workers" (p. 114). In many firms, unions have gone beyond the "consultation" stage, and actually participate in policy-making and in administering job evaluation, wage incentive systems, etc. Yet the author apparently overlooks the impact of these developments.

There are two chapters on wages, dealing with differentials, merit increase systems, job evaluation, piece rates, and restriction of output. While there are many interesting illustrations, the discussion is on a pretty elementary level, and some of the conclusions reached do not square with experience elsewhere as reported in the specialized literature. In fact, the absence of any references to other studies (in addition to *Management and the Worker*) limits the usefulness of the book except as an introduction to the subject.

In these chapters, as in the earlier ones on the social structure of an industrial organization, the difficulties confronting effective coöperation are stressed. There is an admission that a "sound piece-work system usually does increase efficiency and actually gets more output per man than a straight day-work system," but a discussion of the components of such a system is lacking.

Methods of securing coöperation within an industrial organization are finally presented in the last two chapters of the book. Such procedures as advance explanation and consultation, sympathetic listening, etc., are clearly

helpful, but their value would have been impressed upon the reader more forcibly if they had been offered when the numerous difficulties in the way of securing coöperation were discussed earlier. This was done effectively, for example, in the brief discussion of the human problems resulting from organizational changes (pp. 218-21).

Executives and students of management, to whom the book is primarily addressed on an introductory level, will get a better understanding of the social structure of industry by reading this book, and they will be impressed with the complexity of the problems of getting coöperation between groups and levels in the factory organization. But they are less likely to understand clearly how to handle those problems effectively.

Charles A. Myers

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Consumption: Coöperation

The Co-operative Movement and Present-Day Problems, with Special Reference to Rehabilitation and Reconstruction. (Montreal: Internat. Labour Office. 1945. Pp. 232. 4 shillings.)

This report, it is explained, is mainly documentary; it attempts, not to formulate a plan for the future, but to provide material for the carrying out of such plans as are made. Dealing with the comparatively long-range problems, the report is a companion piece to a previous report, *Co-operative Organizations and Post-war Relief,* which dealt with the immediate post-war problems. It is an appraisal of the coöperative movement throughout the world with respect to (1) restoration of basic economic functions (food and agriculture, transport, power and housing) in the various countries; (2) social problems of rehabilitation, such as employment, improvement of the standard of living, and democratic management of the economy; and (3) conditions and forms of the coöperative contribution to rehabilitation and reconstruction effort.

Though the study is not statistical in nature, it presents summary figures showing the number of coöperative associations in these various fields and in many cases indicates the proportion of national trade accounted for by the coöperatives operating therein. In nearly all the countries of Europe the coöperatives were an important factor in the national economy before the war, and even the German conquerors were forced to make use of them—and in some cases even expand them—in order to keep the productive and distributive system functioning.

The report calls attention to the "practically unlimited variety" of economic and social functions which the coöperatives perform. Among those discussed in Part I are the agricultural supply associations (separate sections being devoted to those handling feeding stuffs and fertilizer, seeds, and farm implements and machinery), livestock-breeding associations, rural credit

associations, and coöperatives marketing specific commodities (grain, livestock and meat, eggs and poultry, dairy products, fruits and vegetables, etc.) in the various countries. The contributions that each of these forms can make toward the rehabilitation of Europe are discussed. The report makes a special plea for the restoration and expansion of the fishery associations—one type of association the product of which constitutes a net addition to much-needed supplies of animal protein, whereas "stock and poultry are in competition for their food with animals and men." As problems of supplying fuel, transportation, power, and housing will be of "tremendous urgency and importance in the immediate postwar period," a chapter is devoted to the development of coöperatives in each of these fields.

Part I thus presents a remarkably able cross section of the coöperative movement, by type of association—a task much more difficult than description country by country. If any criticism can be made, it is that the data, representing as they do in most cases the pre-war situation, are open to the objection that they may no longer picture the actual situation. The writers anticipate such criticism by acknowledging this at the outset and stating their conviction that "it seemed better to have some gaps in a documentation which was otherwise generally sufficient than to have a more perfect documentation too late to be of use."

In many of the German-dominated countries reports indicate that the coöperative movement even expanded during the war, though of course under strict nazi domination and probably with little or no control of policy by the members. It is probable, also, that the original members—especially where they were largely trade unionists and Social Democrats—have been scattered or slain under the German policy of extermination, and the extent of really democratic views among the later members is open to guess only. In these countries there was also widespread destruction of physical plant in the last, desperate stages of the war. In view of all this, rehabilitation of the movement itself must necessarily precede any contribution it can possibly make toward economic rehabilitation of the countries. Reports indicate a surprising degree of coöperative recovery even in the early months after liberation, but the extreme prostration of the economic system in the war-torn countries and the lack of even the most elementary necessities in some cases make the process of reconstruction a long one. As the report frequently points out, the most promising immediate sources of coöperative help are the coöperative movements of the uninvaded countries and that of the United States.

The infinitely greater potential advantages of collective use and action, as compared to individual use and effort, are the ground for the special consideration bespoken for the coöperative movement.

In Part II, which deals with the social problems of rehabilitation, the report discusses the value of various types of coöperatives, such as productive associations (self-help coöperatives among unemployed, workers' productives, and labor-contracting associations) and collective farming and land-leasing associations, as employers of labor. It points out the great stability of employ-

ment in coöperative associations and the little-recognized fact that, even in times of depression when employment in general is falling off, coöperative employment keeps on going up, as a consequence of the coöperatives' greater resistance to economic disturbances. Also, the coöperatives offer some resistance to the "uncompensated disturbances of equilibrium from which the prevalent economic system suffers" in their influence toward price stabilization and more equitable distribution of national income through the mechanism of the patronage return and their influence on "the orientation of the economic process." The private producer and seller, the authors state, has to depend on a problematical market and use his ingenuity to market a product for which a demand may not exist but must be created; the "service" enterprise—the coöperative—is "concerned to satisfy expressed needs." Again, the private producer, being interested in activities yielding the greatest profit, may leave basic needs unsatisfied or insufficiently satisfied, keeping prices high on a market that could otherwise be much wider. The coöperatives' nonprofit operation, which increases the purchasing power of the members, tends to raise their level of living, a tendency which has been furthered by the coöperatives' work for the improvement of quality of goods and the education of their members for better nutrition.

As for the coöperative contribution to a democratic economy, the report notes that, to the extent that the coöperative members exercise their rights and assume their responsibilities, "each coöperative enterprise is a successful democracy in microcosm." The movement is a "breeding ground of administrators of the type which the democratic economy needs," and one of the places where the people's economic will is formed. The coöperators themselves, the report says, view their function as even more fundamental: "They think that there cannot be real reconstruction in general and democratic reconstruction in particular, without a broad and persistent effort of re-education, for the paramount need of democracies is for well-informed and active citizens. They hold that it is within genuine people's institutions, especially within trade-union and coöperative organizations, that habits of passive obedience can be most quickly dissolved and that a sense of democratic discipline and responsibility can be restored."

Part III emphasizes, however, that the importance of the post-war coöperative contribution depends not only on the readiness of the movement to play its part, but also on the degree to which it is asked to participate and "most of all, on the way in which it can be fitted into the general framework of the intervention that the public authorities of most countries will be led to make in the economic field." There are in coöperative history many instances of collaboration between state and coöperatives, by (1) "simple mandate conferred by public authorities on a coöperative or a group of coöperatives; (2) delegation, which establishes a real mutual collaboration" when the public authority entrusts coöperatives with certain functions which it enables or assists them to perform by giving them help of various kinds; (3) association of state and coöperative movement in semi-public joint service enterprises; and (4) integration of coöperatives in public administrations or

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Editor's Note—Through the kindness of Bertrand Nogaro, professeur à la Faculté de Droit de Paris, we have received the following list of books which he regards as the more important economic works published in France during recent years. A number of the volumes have been received and reviews will appear in early numbers.

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NOTES

Editor's Note

Beginning September 15, 1946, the editorial office of the *Review* will return to McGraw Hall, Cornell University, Ithaca, New York.

Miss Mary Connally has resigned as assistant to the managing editor of the *Review* to become administrative assistant to the Executive Vice Chairman of the American National Red Cross.

It was hoped that, with the current issue of the *Review*, the difficulties with printing schedules would have disappeared and permitted appearance on the pre-war scheduled date of June 15. Unfortunately, the effects of the war were not yet so far liquidated as to make this possible. As soon as dependable printing schedules are restored, the date of publication will be brought forward to the first day of March, June, September and December, principally for the purpose of permitting advance notice of the annual meetings of the Association in the December number.

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American Accounting Association—Eric L. Kohler, 1 North La Salle Street, Chicago, Illinois, president; Ernest C. Davies, Northwestern University, secretary-treasurer.
American Association of University Teachers of Insurance—C. A. Kulp, University of Pennsylvania, president; Chester A. Kline, University of Pennsylvania, secretary-treasurer.
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Rural Sociological Society—Paul H. Landis, Washington State College, president; Leland B. Tate, Farm Foundation, secretary-treasurer.

Two Sarah Frances Hutchinson Cowles Fellowships for women will be awarded by the University of Chicago for the academic year 1947-48 upon nomination by the Cowles Commission for Research in Economics. Applicants must be students of outstanding promise, preparing for the degree of master or doctor in the field of social sciences and statistics, preferably in quantitative economics or mathematical statistics. The Fellowships amount to $1000 each, but may be supplemented by an additional grant of $500.

The Economic and Social Council of the United Nations in February, 1946, established a Statistical Commission with general responsibilities for assisting the Council in coördinating the statistics which will be required from member governments and developing the central statistical services of the Secretariat. The Council elected the following persons as initial members of the Statistical Commission: H. Campion (United Kingdom), head of the Central Statistical Office of the British Cabinet; M. G. Jahn (Norway), president of the Bank of Norway; M. A. Teixera de Freitas (Brazil), secretary general of the Brazilian Institute of Geography and Statistics; P. C. Mahalanobis (India), Statistical Laboratory,

Presidency College, Calcutta; Stuart A. Rice (United States), assistant director of the Bureau of the Budget in Charge of the Division of Statistical Standards; and Professor Alfred Bernard Sauvy (France). Three other initial members of the Commission are to be designated by members of the Council for China, Ukraine and the U.S.S.R.

Gilbert H. Barnes died on August 12, 1945.

Alva H. Benton of the Bureau of Agricultural Economics, Washington, D.C., died in November, 1945.

Thomas F. Conway died on November 9, 1945.

Joseph Gordon died on October 12, 1945.

Eugene A. Heinmann died on November 11, 1945.

H. John Stratton died on August 12, 1945, while on leave from Illinois College. He was serving the New England office of the Office of Price Administration as regional economist at the time of his sudden death.

Orlando F. Weber died September 6, 1945.

Appointments and Resignations

William H. Andrews, formerly of Purdue University and recently discharged from the Navy, joined the staff at Indiana University as instructor in economics in June, 1946.

Harold B. Baker has resigned as assistant professor of management at Indiana University and is now at General Motors Institute as assistant to the director and head of the business administration division.

Everett Clair Bancroft of the economics department of Colgate University was given a leave of absence from the beginning of November through February to serve as economic consultant to the State of New York Department of Commerce and, on his return to the university, will continue his relations with the State Department of Commerce.

Robert B. Bangs has resigned from the Department of Economics, Indiana University, and returned to the Bureau of Foreign and Domestic Commerce.

Robert J. Baxter, assistant professor of finance in the School of Business Administration at the University of Pittsburgh, has resigned.

Richard F. Behrendt was promoted from associate professor to professor of international affairs at Colgate University.

J. N. Berretoni, formerly instructor at the University of Minnesota, has been appointed assistant professor of statistics at Iowa State College.

Francis M. Bird, professor and head of the department of commerce in the College of Engineering and Commerce, University of Cincinnati, was appointed dean of the university's new College of Business Administration on March 1, 1946.

Robert L. Bishop has been promoted to the rank of assistant professor of economics in the Department of Economics and Social Science at the Massachusetts Institute of Technology.

Harry C. Bredemeier has been appointed instructor in sociology at Princeton University.

Douglas S. Brown has resigned as instructor of economics at Temple University to accept an appointment as assistant professor of economics at Pennsylvania State College.

Douglass V. Brown of the Industrial Relations Section at the Massachusetts Institute of Technology has been appointed Sloan professor of industrial management in the department of business and engineering administration.

P. S. Brown of the Department of State conducted courses in the department of economics of the University of Michigan during the 1946 summer session.

J. Murray Carroll, professor of economics, will be on leave from Bates College during the second semester.

Joseph Carwell has been appointed chief of economics for the UNRRA mission in Shanghai.

Francis R. Cella was separated from the Army in December and is now director of the research bureau and head of the statistical department at the University of Oklahoma.

Arthur Claydon is teaching in the department of economics at Syracuse University.

William H. Conley has accepted an appointment as dean of the School of Commerce, Loyola University, Chicago.

M. C. Cravens, formerly of Cornell University, has been appointed assistant professor in agricultural economics at Michigan State College.

Raymond E. Crist, formerly of the Institute of Tropical Agriculture, Mayaguez, Puerto Rico, has joined the staff of the College of Business and Public Administration, Department of Natural and Human Resources, University of Maryland, as professor of geography of Latin America.

Ernest A. Dauer has returned to the Federal Deposit Insurance Corporation, Washington, D.C., where he is principal economist in its division of research and statistics, after three years' active duty with the Navy.

Pearce Davis, formerly assistant wage stabilization director of the National War Labor Board and later chairman of the National Telephone Commission, has been appointed chairman of the department of business and economics at Illinois Institute of Technology.

E. D. Domar, who has been connected with the Board of Governors of the Federal Reserve System, conducted courses in the department of economics at the University of Michigan during the 1946 summer session.

Walter A. Durham, Jr., is now engaged as director of research for the Lumberman's Industrial Relations Committee, Inc.

Walter P. Egle has resigned his position at Ohio State University to accept a professorship at the University of Cincinnati.

Walter L. Eisenberg, formerly executive secretary of the Second Regional Trucking Panel and a member of the staff of the wage stabilization director of the Second Regional War Labor Board, has been appointed to a senior assistantship in the department of economics of the School of Commerce, Accounts and Finance of New York University.

J. Harold Ennis, professor of sociology, Cornell College, Iowa, conducted courses in the department of economics at the University of Michigan during the 1946 summer session.

Grover W. Ensley has returned to his position as senior fiscal analyst in the Bureau of the Budget after separation from the Navy where he served with the rank of Lieutenant (j.g.) as Control Group Officer, Ordnance Supply Branch, in Guam.

George Farmer is now instructor of business administration at West Virginia University.

Paul Fisher has been appointed assistant professor of economics at Dartmouth College.

Cleo Fitzsimmons has resigned her position at the University of Illinois and is now professor and head of home management in the School of Home Economics in Purdue University.

John H. Frederick, formerly of the University of Texas, has been added to the staff of the College of Business and Public Administration, University of Maryland, as professor of transportation and foreign trade.

S. H. Frankel is vacating his chair of economics and economic history at the University of the Witwatersrand in order to take up an appointment to the chair of colonial economic affairs at Nuffield College, Oxford.

John Dean Gaffey has been named district price economist of the Los Angeles office of the Office of Price Administration.

George C. Grosscup completed his war service as Captain in the Army Air Corps and will join the department of economics at the University of Vermont as assistant professor.

Harold W. Guest has resumed his duties at Baker University after teaching at the Army University in Biarritz and lecturing in Germany.

David B. Hamilton has been appointed instructor in economics in the School of Business Administration of the University of Pittsburgh.

Wesley J. Hansen, recently discharged from the Navy after 27 months' duty, has become associated with the Brentwood Egg Company, Washington, D.C.

Clifford M. Hardin has been promoted from associate professor to professor in agricultural economics at Michigan State College.

C. Lowell Harriss has resumed his teaching of economics and contemporary civilization at Columbia University after five years' service in the Division of Tax Research of the Treasury Department and with the Army Air Forces on various phases of procurement.

Penelope C. Hartland has been appointed instructor of economics at Brown University.

Gabriel S. Hauge, an instructor in economics at Princeton University when he joined the Navy in January, 1942, was discharged in December, 1945, and is now at Harvard University on a Social Science Research Council Demobilization Award.

Harry Henig, after war service with the War Labor Board and at the Army University abroad, has resumed his work at the University of Cincinnati with the rank of associate professor.

William W. Hewett of the University of Cincinnati served as a member of the faculty of the Institute of International Relations held at Antioch College during July.

John Hope, II, after two years as Fair Practice Examiner, Atlanta Regional office of the FEPC while on leave from Atlanta University, on October 1, 1945, joined the Social Science Institute, Fisk University, as specialist on industrial relations to organize a section concerned with minorities problems in industry and labor organizations.

Hervey D. Hotchkiss, who recently returned from teaching in the American University at Biarritz, France, has been discharged as a Lieutenant Colonel and is now teaching at the College of the City of New York and at New York University.

E. Jay Howenstine has been associated with the Office of Price Administration as adjustment analyst.

Simeon Hutner has recently served as a part-time assistant in economics in Princeton University.

J. Hugh Jackson, professor of accounting, and dean of the Graduate School of Business, Stanford University, has been appointed Dickinson lecturer at Harvard University for the academic year 1946-47.

David R. Jenkins has recently returned from work in Japan and China as economic advisor to the U. S. Reparations Mission, and has resumed work in the Division of Monetary Research of the Treasury Department.

E. A. J. Johnson has resumed his duties as professor of economic history at New York University after war service as Lieutenant Colonel. As chief of the economics branch of the Allied Land Forces in Norway, he was the first American to enter Norway, having been attached then to the 1st (British) Airborne Division. He was decorated with the Cross of King Haakon VII, the Bronze Star and the Order of the British Empire.

B. M. Joffe has been elected executive director of the National Wage Stabilization Board, Washington.

Matthew A. Kelly of Princeton University has been promoted to the grade of assistant professor.

C. J. Kennedy has been appointed assistant professor of economics at the University of Nebraska for the coming year.

Maurice Kirsch has been appointed instructor of accounting at West Virginia University.

Albert Lauterbach of Sarah Lawrence College is teaching also in the Graduate Division of Brooklyn College.

Ben W. Lewis, professor of economics at Oberlin College, conducted courses in the department of economics of the University of Michigan during the 1946 summer session.

Raymond H. Lounsbury has been appointed assistant professor of economics at Dartmouth College.

Arthur F. Lucas, who has been absent on leave for war service since 1943, will return

to his position as professor of economics and sociology at Clark University for the year beginning September, 1946.

Samuel Lutzker, formerly with the U. S. Employment Service as research assistant, is now employed as a senior economist with the New York State Division of Housing.

Edward B. Malloy has been appointed instructor in accounting in the School of Business Administration of the University of Pittsburgh.

Fritz Karl Mann, professor of economics and public finance at American University, has been invited by the University of Cologne through the British Military Government to reoccupy his former chair in the department of economic and social sciences which in 1935 he had to give up under nazi pressure. Since he plans to continue serving this country, he has declined the invitation.

Theodore F. Marbury has been appointed instructor in economics in Princeton University.

Donald B. Marsh will be on a leave of absence from Barnard College during the academic year 1946-47, but will continue his association with the department of finance and business research of the Chase National Bank.

Edgar W. Martin in the fall will assume new duties as professor and head of the department of economics at Illinois College.

Will E. Mason was an instructor in economics in Princeton University during the summer term of 1946.

James A. Maxwell, on leave from Clark University for governmental work since 1942 and most recently as economic consultant in the Department of State, will return to his position as professor of economics in September, 1946.

J. M. McDaniel, Jr., has resigned as professor of economics at Dartmouth College to continue in government work with the Department of Commerce, Washington.

William J. McLarney, formerly of the faculty of Iowa State College, has joined the faculty of the College of Business and Public Administration at the University of Maryland as associate professor of industrial administration.

Sidney L. Miller, formerly head of the transportation department at the University of Iowa, is now professor and head of the department of transportation in the School of Business Administration of the University of Pittsburgh.

Lloyd G. Mitten, head of the department of economics at Olivet Nazarene College, was visiting lecturer in economics at Indiana University during the past summer session.

Eduardo Montealegre is working as an advisor to the Ministry of National Economy of Guatemala.

Theodore Morgan has been appointed an instructor in the department of economics of Harvard University for the year beginning July 1, 1946.

J. E. Morton of the National Bureau of Economic Research is joining the faculty of Cornell University.

Charles A. Myers has been promoted to the rank of associate professor of industrial relations in the department of economics and sociology at the Massachusetts Institute of Technology.

John H. Myers has been appointed assistant professor of business statistics in the School of Commerce of Northwestern University.

Ruby Turner Norris, who has been serving as chief economist for the Office of Price Administration in Honolulu during the war, will return to her position as assistant professor of economics at Vassar College in the fall.

Bert E. O'Beirne has been promoted from instructor to assistant professor in economics at Michigan State College.

Andreas G. Papandreou has been appointed an instructor in the department of economics at Harvard University for the year beginning July 1, 1946.

Clyde William Phelps, head of the department of economics in the University of Chattanooga, has been commissioned by the Board of Directors of the National Retail

Credit Association to prepare an official handbook on credit granting for the association.

Addison Pond is in the investment research section of the National Life Insurance Company following his discharge from the Army Air Forces as a Lieutenant Colonel and after two and a half years' service as chief of personnel and operations of the Air Forces Reinforcement Command in Europe, for which he was awarded the Legion of Merit, the Bronze Star and the French Croix de Guerre with Palm.

Charles Prince resigned his position as Soviet Russian expert of the Chamber of Commerce of the United States to accept a similar assignment on the editorial staff of *World Report.*

Harry L. Purdy has resigned his position as professor of economics at Dartmouth College to continue his work as assistant director of research for the Missouri Pacific Railroad.

Daniel W. Raaf, formerly instructor of economics at Lafayette College, has been appointed instructor of economics at Brown University.

Joseph S. Ransmeier has been appointed assistant professor of economics at Dartmouth College.

C. J. Ratzlaff, formerly head of the economics department of Lafayette College and recently with the U. S. Tariff Commission, has joined the faculty of the College of Business and Public Administration of the University of Maryland as professor of international finance and economic relations.

Raymond de Roover has resigned his position at Oberlin College to return to Wells College with the rank of associate professor of economics.

George Rosen has been a part-time assistant in economics at Princeton University.

Myron Rosenfield has accepted a position with the Continental Converters Corporation as economic analyst.

Richard F. Ruggles has been appointed an instructor in the department of economics of Harvard University for the year beginning July 1, 1946.

Arnold W. Sametz has been a part-time assistant in economics in Princeton University.

Richard Scheuch has been a part-time assistant in economics in Princeton University.

Arthur Schweitzer of the University of Wyoming has been promoted to associate professor.

I. L. Sharfman, chairman of the department of economics at the University of Michigan, served on the emergency board established under the Railway Labor Act with reference to wages of railway express employees.

Harold W. Smart will resume his duties in September as assistant professor of economics at the Massachusetts State College, after a two years' leave of absence.

Arnold W. Soloway has been appointed part-time instructor of economics at Brown University.

William A. Spurr, formerly a Lieutenant Commander in the Navy, has joined the staff of the University of Chicago School of Business as associate professor of statistics.

George J. Stigler, formerly professor of economics at the University of Minnesota, has been appointed professor of economics at Brown University.

Merton P. Stoltz has been promoted from assistant professor to associate professor of economics at Brown University.

Milton C. Taylor, formerly of the University of British Columbia, has been appointed as graduate assistant in economics at Michigan State College.

Arthur P. L. Turner is now with the Bank of the Manhattan Company, after completing his wartime assignment with the Treasury Department and upon resignation from Montana State University.

John V. VanSickle, research professor of economics at Vanderbilt University, has accepted the position of chairman of economics at Wabash College, Indiana.

Jacob Viner has been appointed professor of economics at Princeton University.

Charles Walsh has resigned his position as chief of the Office of Export-Import, Office of Price Administration, Washington, to resume his duties as assistant professor of economics at the Graduate School of Fordham University.

William N. Watson is at present with the Department of State in London.

George W. Westcott will return in September to his position as extension specialist in the department of agricultural economics at the Massachusetts State College.

James M. Whitsett has returned to his position as associate professor of banking and finance at Western Reserve University after serving as a Major in the Army Air Forces at Wright Field.

Edmund Whittaker, formerly associated with Brown University and the University of Illinois, has joined the staff of Indiana University as professor of economics.

John A. Wolfard, after three years' active duty in the Supply Corps of the Navy, has been appointed assistant professor of economics at Montana State University.

Nathaniel Wollman, assistant professor of economics at Colorado College, was a visiting lecturer in economics at Indiana University during the past summer session.

James R. Young, formerly a Lieutenant in the Navy and on leave of absence from Centre College, has joined the staff at Indiana University as instructor in economics.

T. N. Carver

Number 19 of a series of photographs of past presidents of the Association.

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JOHN MAYNARD KEYNES
1883–1946

By JOSEPH A. SCHUMPETER*

I

In his sparkling essay on the Great Villiers Connection,[1] Keynes revealed a sense of the importance of hereditary ability—of the great truth, to use Karl Pearson's phrase, that ability runs in stocks—that fits but ill into the picture many people seem to harbor of his intellectual world. The obvious inference about his sociology is strengthened by the fact that in his biographical sketches he was apt to stress ancestral backgrounds with unusual care. He would therefore understand my regret at my inability, owing to lack of time, to probe into the past of the Keynes Connection. Let us hope that someone else will do this, and content ourselves with an admiring glance at the parents. He was born on the fifth of June, 1883, the eldest son of Florence Ada Keynes, daughter of the Reverend John Brown, D.D., and of John Neville Keynes, Registrar of the University of Cambridge—a mother of quite exceptional ability and charm, one-time mayor of Cambridge, and a father who is known to all of us as an eminent logician and author, among other things, of one of the best methodologies of economics ever written.[2]

Let us note the academic-clerical background of the subject of this memoir. The implications of this background—both the eminently English quality of it and the gentry element in it—become still clearer when we add two names: Eton and King's College, Cambridge. Most of us are teachers, and teachers are prone to exaggerate the formative influence of education. But nobody will equate it to zero. Moreover, there is

* The author is professor of economics at Harvard University.

[1] The essay, a review of W. I. J. Gun, *Studies in Hereditary Ability*, was published in *The Nation and Athenaeum*, March 27, 1926, and has been reprinted in the volume *Essays in Biography*, 1933. This volume sheds more light on Keynes the man and Keynes the scholar than does any other publication of his. I shall accordingly refer to it more than once.

[2] *Scope and Method of Political Economy* (1891). The well-earned success of this admirable book is attested by the fact that a reprint of its fourth edition (1917) was called for as late as 1930: in fact, so well has it kept its own amidst the surf and breakers of half a century's controversies about its problems that even now students of methodology can hardly do better than choose it for guide.

nothing to show that John Maynard's reaction to either place was anything but positive. He seems to have enjoyed a thoroughly successful scholastic career.[3] In 1905 he was elected President of the Cambridge Union. In the same year he emerged as twelfth Wrangler.

Theorists will notice the latter distinction which cannot be attained without some aptitude for mathematics plus hard work—work hard enough to make it easy for a man who has gone through that discipline to acquire any more advanced technique he may wish to master. They will recognize the mathematical quality of mind that underlies the purely scientific part of Keynes's work, perhaps also the traces in it of a half-forgotten training. And some of them may wonder why he kept aloof from the current of mathematical economics which gathered decisive momentum at just about the time when he first entered the field. Nor is this all. Though never definitely hostile to mathematical economics—he even accepted the presidency of the Econometric Society—he never threw the weight of his authority into its scale. The advice that emanated from him was almost invariably negative. Occasionally his conversation revealed something akin to dislike.

Explanation is not far to seek. The higher ranges of mathematical economics are in the nature of what is in all fields referred to as "pure science." Results have little bearing—as yet, in any case—upon practical questions. And questions of policy all but monopolized Keynes's brilliant abilities. He was much too cultivated and much too intelligent to despise logical niceties. To some extent he enjoyed them; to a still greater extent he bore with them; but beyond a boundary which it did not take him long to reach, he lost patience with them. *L'art pour l'art* was no part of his scientific creed. Wherever else he may have been progressive, he was not a progressive in analytic method. We shall see that this also holds in other respects that are unconnected with the use of higher mathematics. If the purpose seemed to justify it, he had no objection to using arguments that were as crude as those of Sir Thomas Mun.

II

An Englishman who entered adult life from Eton and Cambridge, who was passionately interested in the policy of his nation, who had conquered the presidential chair of the Cambridge union in the symbolic year 1905 that marked the passing of an epoch and the dawn of another[4] —why did such an Englishman not embark upon a political career? Why did he go to the India Office instead? Many pro's and con's enter

[3] Eton always meant much to him. Few of the honors of which he was the recipient later on pleased him so much as did his election, by the masters, as their representative on Eton's governing board.

[4] The Campbell-Bannerman victory was won and a parliamentary Labor Party emerged in January, 1906.

into a decision of this kind, money among others, but there is one point about it which it is essential to grasp. Nobody could ever have talked to Keynes for an hour without discovering that he was the most unpolitical of men. The political game as a game interested him no more than did racing—or, for that matter, pure theory *per se*. With quite unusual gifts for debate and with a keen perception of tactical values, he yet seems to have been impervious to the lure—nowhere anything like as strong as it is in England—of the charmed circle of political office. Party meant little or nothing to him. He was ready to coöperate with anyone who offered support for a recommendation of his and to forget any past passage of arms. But he was not ready to coöperate with anyone on any other terms, let alone to accept anyone's leadership. His loyalties were loyalties to measures, not loyalties to individuals or groups. And still less than a respector of persons was he a respector of creeds or ideologies or flags.

Was he not, therefore, cut out for the rôle of an ideal civil servant, by nature made to become one of those great permanent Under-secretaries of State whose discreet influence counts for so much in the shaping of England's recent history? Anything but that. He had no taste for politics, but he had less than no taste for patient routine work and for breaking in, by gentle arts, that refractory wild beast, the politician. And these two negative propensities, the aversion to the political arena and the aversion to red tape, propelled him toward the rôle for which he was indeed by nature made, for which he quickly found the form that suited him to perfection, and from which he never departed throughout his life. Whatever we may think of the psychological laws which he was to formulate, we cannot but feel that, from an early age, he thoroughly understood his own. This is, in fact, one of the major keys to the secret of his success—and also to the secret of his happiness: for unless I am much mistaken his life was an eminently happy one.

Thus, after two years at the India Office (1906–08) he went back to his university, accepting a fellowship at King's (1909), and quickly established himself in the circle of his Cambridge fellow economists and beyond. He taught straight Marshallian doctrine with the Fifth Book of the *Principles* as the center, the doctrine that he mastered as few people did and with which he remained identified for twenty years to come. A picture survives in my memory of how he then looked to a casual visitor to Cambridge—the picture of the young teacher of spare frame, ascetic countenance, flashing eyes, intent and tremendously serious, vibrating with what seemed to that visitor suppressed impatience, a formidable controversialist whom nobody could overlook, everybody respected, and some liked.[5] His rising reputation is attested by the fact

[5] My own acquaintance with Keynes, productive of a totally different impression, dates only from 1927.

that as early as 1911 he was appointed editor of the *Economic Journal* in succession to its first editor, Edgeworth. This key position in the world of economics he filled without interruption and with unflagging zeal until the spring of 1945.[6] Considering the length of his tenure of this office and all the other interests and avocations in the midst of which he filled it, his editorial performance is truly remarkable, in fact, almost unbelievable. It was not only that he shaped the general policy of the *Journal* and of the Royal Economic Society, of which he was secretary. He did much more than this. Many articles grew out of his suggestions; all of them received, from the ideas and facts presented down to punctuation, the most minute critical attention.[7] We all know the results, and everyone of us has—no doubt—his own opinion about them. But I feel confident of speaking for all of us when I say that, taken as a whole, Keynes the editor has had no equal since Du Pont de Nemours managed the *Ephêmérides*.

The work at the India Office was not more than an apprenticeship that would have left few traces in a less fertile mind. It is highly revealing not only of the vigor but also of the type of Keynes's talent that it bore fruit in his case: his first book—and first success— was on *Indian Currency and Finance*.[8] It appeared in 1913, when he was also appointed member of the Royal Commission on Indian Finance and Currency (1913–14). I think it fair to call this book the best English work on the gold exchange standard. Much more interest attaches, however, to another question that is but distantly related to the merits of this performance taken by itself; can we discern in it anything that points toward the *General Theory?* In the Preface to the latter, Keynes himself claimed not more than that his teaching of 1936 seemed to him "a natural evolution of a line of thought which he had been pursuing for several years." On this I shall offer some comments later on. But now I will make bold to assert that, though the book of 1913 contains none of those characteristic propositions of the book of 1936 that have been felt to be so "revolutionary," the general attitude taken toward monetary phenomena and monetary policy by the Keynes of 1913 clearly foreshadowed that of the Keynes of the *Treatise* (1930).

Monetary management was then no novelty, of course—which is precisely why it should not have been heralded as a novelty in the 20's

[6] Edgeworth served once more, as joint editor, 1918–1925. He was succeeded by D. H. Macgregor, who served, 1925–1934, to be in turn succeeded by Mr. E. A. G. Robinson (who had been appointed assistant editor in 1933).

[7] Once he patiently explained to a foreign contributor that, while it is permissible to abbreviate *exempli gratia* into *e.g.*, it is not permissible to abbreviate "for instance" into *f. i.*—and would the author sanction the alteration?

[8] In 1910–11 he gave lectures on Indian Finance at the London School of Economics. See F. A. Hayek, "The London School of Economics, 1895–1945," *Economica* (Feb., 1946), p. 17.

and 30's—and preoccupation with Indian problems was particularly likely to induce awareness of its nature, necessity, and possibilities. But Keynes's vivid appreciation of its bearing not only upon prices and exports and imports, but also on production and employment was nevertheless something new, something that, if it did not uniquely determine, yet conditioned his own line of advance. Moreover, we must remember how closely his *theoretical* development in post-war times was related to the particular situations in which he offered practical advice and which neither he nor anyone else foresaw in 1913: add the theoretical implications of the English experience in the 20's to the theory of *Indian Currency and Finance*, and you will get the substance of the Keynesian ideas of 1930. This statement is conservative. I could go further—a little—were I not afraid of falling into an error that is very common among biographers.

III

In 1915, the potential public servant in the academic gown turned into an actual one: he entered the Treasury. English finance during the First World War was eminently "sound" and spelled a moral performance of the first order. But it was not conspicuous for originality, and it is possible that the brilliant young official then acquired his dislike of the Treasury Mind and the Treasury View that became so marked later on. His services were, however, appreciated, for he was chosen to serve as Principal Representative of the Treasury at the Peace Conference—which might have been a key position if such a thing could have existed within the orbit of Lloyd George—and also as Deputy for the Chancellor of the Exchequer on the Supreme Economic Council. More important than this, speaking from the biographer's standpoint, is his abrupt resignation in June, 1919, which was so characteristic of the man and of the kind of public servant he was. Other men had much the same misgivings about the peace, but *of course* they could not possibly speak out. Keynes was made of different stuff. He resigned and told the world why. And he leapt into international fame.

The *Economic Consequences of the Peace* (1919) met with a reception that makes the word Success sound commonplace and insipid. Those who cannot understand how luck and merit intertwine will no doubt say that Keynes simply wrote what was on every sensible man's lips; that he was very favorably placed for making his protest resound all over the world; that it was this protest as such and not his particular argument that won him every ear and many thousands of hearts; and that, at the moment the book appeared, the tide was already running on which it was to ride. There is truth in all this. Of course, there was an unique opportunity. But if we choose, on the strength of this, to deny the greatness of the feat, we had better delete this phrase altogether

from the pages of history. For there are no great feats without preëxisting great opportunities.

Primarily the feat was one of moral courage. But the book is a masterpiece—packed with practical wisdom that never lacks depth; pitilessly logical yet never cold; genuinely humane but nowhere sentimental; meeting all facts without vain regrets but also without hopelessness: it is sound advice added to sound analysis. And it is a work of art. Form and matter fit each other to perfection. Everything is to the point, and there is nothing in it that is not to the point. No idle adornment disfigures its wise economy of means. The very polish of the exposition—never again was he to write so well—brings out its simplicity. In the passages in which Keynes tries to explain, in terms of the *dramatis personae*, the tragic failure of purpose that produced the Peace, he rises to heights that have been trodden by few.[9]

The economics of the book, as well as of *A Revision of the Treaty* (1922) that complements and in some respects amends its argument, is of the simplest and did not call for any refined technique. Nevertheless, there is something about it that calls for our attention. Before embarking on his great venture in persuasion, Keynes drew a sketch of the economic and social background of the political events he was about to survey. With but slight alterations of phrasing, this sketch may be summed up like this: *Laissez-faire* capitalism, that "extraordinary episode," had come to an end in August, 1914. The conditions were rapidly passing in which entrepreneural leadership was able to secure success after success, propelled as it had been by rapid growth of populations and by abun-

[9] See pp. 26–50, on the Council of Four, republished, with an important addendum, the Fragment on Lloyd George, in the *Essays in Biography*. It is painful to report that, at the time, some opponents of Keynes's views, in full retreat before his victorious logic, seem to have resorted to sneers about his presentation of certain facts and his interpretation of motive, neither of which, so they averred, he was in a position to judge. Since this indictment of Keynes's veracity has been repeated recently in a *causerie* published in an American magazine, it is first of all necessary to ask the reader to satisfy himself that not a single result of Keynes's analysis and not a single recommendation of his depends on the correctness or incorrectness of the picture he drew of the motives and attitudes of Clemenceau, Wilson, and Lloyd George. But, secondly, since it is part of the purpose of this memoir to delineate a character, it is further necessary to prove that there is absolutely no foundation for the aspersion that Keynes indulged in a flight of "poetic fantasy" and that he pretended to an intimate knowledge of "arcana" that cannot have been known to him—which, at best, would convict him of petty vanity and, at worst, of more than that. But the proof in question is not difficult to supply. If the reader will refer to that masterly sketch, as I hope he will, he is bound to find that Keynes claimed no intimacy with those three men and personal acquaintance only with Lloyd George. He said nothing about the private meetings of the four (the fourth was Orlando), but merely described scenes at the regular meetings of the Council of Four, which, along with all other leading experts, he must have normally attended in his official capacity. Moreover, his presentation of the personal aspects of the steps on the road that led to the disastrous result is amply supported by independent evidence: his brilliant story is nothing but a reasonable interpretation of a course of events that is common knowledge. Finally, critics had better bear in mind that this interpretation is distinctly generous and perfectly free from traces of any resentment, however justifiable, that Keynes may have felt.

dant opportunities to invest that were incessantly recreated by technological improvements and by a series of conquests of new sources of food and raw materials. Under these conditions, there had been no difficulty about absorbing the savings of a *bourgeoisie* that kept on baking cakes "in order not to eat them." But now (1920) those impulses were giving out, the spirit of private enterprise was flagging, investment opportunities were vanishing, and bourgeois saving habits had, therefore, lost their social function; their persistence actually made things worse than they need have been.

Here, then, we have the origin of the *modern* stagnation thesis—as distinguished from the one which we may, if we choose, find in Ricardo. And here we also have the embryo of the *General Theory*. Every comprehensive "theory" of an economic state of society consists of two complementary but essentially distinct elements. There is, first, the theorist's view about the basic features of that state of society, about what is and what is not important in order to understand its life at a given time. Let us call this his vision. And there is, second, the theorist's technique, an apparatus by which he conceptualizes his vision and which turns the latter into concrete propositions or "theories." In those pages of the *Economic Consequences of the Peace* we find nothing of the theoretical apparatus of the *General Theory*. But we find the whole of the vision of things social and economic of which that apparatus is the technical complement. The *General Theory* is the final result of a long struggle *to make that vision of our age analytically operative.*

IV

For economists of the "scientific" type Keynes is, of course, the Keynes of the *General Theory*. In order to do some justice to the straight-line development which leads up to it from the *Consequences of the Peace*, and of which the main stages are marked by the *Tract* and by the *Treatise*, I shall have to brush aside ruthlessly many things that ought not to go unrecorded. Three foothills of the *Consequences* are, however, mentioned in the note below,[10] and a few words must be said on *A*

[10] These are: his article on population and the ensuing controversy with Sir William Beveridge (*Econ. Jour.*, 1923); his pamphlet, *The End of Laissez-Faire* (1926); and his article on the "German Transfer Problem" in the *Econ. Jour.* (March, 1929), with subsequent replies to the criticism of Ohlin and Rueff. The first attempts to conjure Malthus's ghost—to defend (at the threshold of the period of unsalable masses of food and raw materials!) the thesis that, since somewhere about 1906, nature had begun to respond less generously to human effort and that overpopulation was the great problem, or one of the great problems of our time: perhaps the least felicitous of all his efforts and indicative of an element of recklessness in his makeup which those who loved him best cannot entirely deny. All that needs to be said about *The End of Laissez-Faire* is that we must not expect to find in this piece of work what the title suggests. It was not at all what the Webbs wrote in that book of theirs that invites comparison with Keynes's. The article on German reparations reveals another side of his character: it was evidently dictated by the most generous motives and by unerring political wisdom; but it was

Treatise on Probability which he published in 1921. There cannot be, I fear, much question about what Keynes means for the theory of probability, though his interest in it went far back: his fellowship dissertation had been on the subject. The question that is of interest to us is what the theory of probability meant for Keynes. Subjectively, it seems to have been an outlet for the energies of a mind that found no complete satisfaction in the problems of the field to which, as much from a sense of public duty as from taste, he devoted most of his time and strength. He entertained no very high opinion about the purely intellectual possibilities of economics. Whenever he wished to breathe the air of high altitudes, he did not turn to our pure theory. He was something of a philosopher or epistemologist. He was interested in Wittgenstein. He was a great friend of that brilliant thinker who died in the prime of life —Frank Ramsey, to whose memory he erected a charming monument.[11] But no merely receptive attitude could have satisfied him. He had to have a flight of his own. It is highly revelatory of the texture of his mind that he chose probability for the purpose—a subject bristling with logical niceties yet not entirely without utilitarian connotation. His indomitable will produced what, seen as I am trying to see it, was no doubt a brilliant performance, whatever specialists, non-Cambridge specialists particularly, might have to say about it.

We are drifting from the work to the man. Let us then use this opportunity for looking at him a little more closely. He had returned to King's and to his pre-war pattern of life. But the pattern was developed and enlarged. He continued to be an active teacher and research worker; he continued to edit the *Journal;* he continued to make the public cares his own. But though he strengthened his ties with King's by accepting the important (and laborious) function of Bursar, the London house, at 46 Gordon Square, became second headquarters before long. He acquired an interest in, and became chairman of, *The Nation*—which superseded the *Speaker* in 1921, absorbed the *Athenaeum*, and was, in 1931, merged with *The New Statesman* (*The New Statesman and Nation*) —to which he directed a current stream of articles that would have been full-time work for some other men. Also, he became chairman of the

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not good theory and Ohlin and Rueff found it easy to deal with it. It is difficult to understand how Keynes can have been blind to the weak spots in his argument. But, in the service of a cause he believed in, he would sometimes, in noble haste, overlook defects in the wood from which he made his arrows. Perusal of the collection entitled *Essays in Persuasion* (1931), is perhaps the best method of studying the quality of his reasoning in the not-quite-professional part of his work.

[11] In *The New Statesman and Nation*, October 3, 1931, republished in the *Essays in Biography*. To this essay, the most warm-hearted thing he ever wrote, is appended an anthology of gleanings from Ramsey's notes. These express Ramsey's views, of course, and not Keynes's, but, for an occasion like this, nobody would choose passages that do not strike a sympathetic note. Thus, Ramsey's sayings become indicative of Keynes's philosophy.

National Mutual Life Assurance Society (1921–38) to which he gave much time, and managed an investment company, earning a considerable income from such business pursuits. There was no nonsense about him, in particular no nonsense about business and money making: he frankly appreciated the comforts of a proper establishment; and not less frankly he used to say (in the 20's) that he would never accept a professorial appointment because he could not afford to do so. In addition to all this, he served actively on the Economic Advisory Council and on the Committee on Finance and Industry (Macmillan Committee). In 1925, he married a distinguished artist, Lydia Lopokova, who proved a congenial companion and devoted helpmate—"in sickness and in health"—to the end.

That combination of activities is not unusual. What made it unusual and, indeed, a marvel to behold is the fact that he put as much energy in each of them as if it had been his only one. His appetite and his capacity for efficient work surpass belief, and his power of concentration on the piece of work in hand was truly Gladstonian: whatever he did, he did with a mind freed from everything else. He knew what it is to be tired. But he hardly seems to have known dead hours of cheerlessness and faltering purpose.

Nature is wont to impose two distinct penalties upon those who try to beat out their stock of energy to the thinnest leaf. One of these penalties Keynes undoubtedly paid. The quality of his work suffered from its quantity and not only as to form: much of his secondary work shows the traces of haste, and some of his most important work, the traces of incessant interruptions that injured its growth. Who fails to realize this—to realize that he beholds work that has never been allowed to ripen, has never received the last finishing touch—will never do justice to Keynes's powers.[12] But the other penalty was remitted to him.

In general, there is something inhuman about human machines that fully use every ounce of their fuel. Such men are mostly cold in their personal relations, inaccessible, preoccupied. Their work is their life, no other interests exist for them, or only interests of the most superficial kind. But Keynes was the exact opposite of all this—the pleasantest fellow you can think of; pleasant, kind, and cheerful in the sense in which precisely those people are pleasant, kind, and cheerful who have

[12] The most obvious example for this is his most ambitious venture in research, the *Treatise on Money*, which is a shell of several pieces of powerful but unfinished work, very imperfectly put together (see below, p. 507). But the instance that will convey my meaning best is the biographical essay on Marshall (*Econ. Jour.*, Sept., 1924). He evidently lavished love and care upon it. As a matter of fact, it is the most brilliant life of a man of science I have ever read. And yet, the reader who turns to it will not only derive much pleasure and profit, but also see what I mean. It starts beautifully, it ends beautifully; but in order to be perfect, it would have needed another fortnight's work.

nothing on their minds and whose one principle it is never to allow any pursuit of theirs to degenerate into work. He was affectionate. He was always ready to enter with friendly zest into the views, interests, and troubles of others. He was generous, and not only with money. He was sociable, enjoyed conversation, and shone in it. And, contrary to a widely spread opinion, he could be *polite*, polite with an old-world *punctilio* that costs time. For instance, he would refuse to sit down to his lunch, in spite of telegraphic and telephonic expostulation, until his guest, delayed by fog in the Channel, put in appearance at 4 p.m.

His extracurricular interests were many, and each of them he pursued with joyful alacrity. But this is not all of it. Once more, people are not uncommon who, in spite of absorbing avocations, enjoy some recreative activities in a passive way. The Keynesian touch is that with him recreation was creative. For instance, he loved old books, niceties of bibliographic controversy, details of the characters, lives, and thoughts of men of the past. Many people share this taste which may have been fostered in him by the classical ingredients in his education. But whenever he indulged it, he took hold like the workman he was, and we owe to his hobby several not unimportant clarifications on points of literary history.[13] He also was a lover and, up to a point, a good judge of pictures, to a modest extent also a collector. He thoroughly enjoyed a good play, and founded and generously financed the Cambridge Arts Theatre, which no one who went to it will forget. And, once upon a time, an acquaintance of his received the following note from him, evidently dashed off in high good humor: "Dear . . . , if you wish to know what at the moment *exclusively* occupies my time, look at the enclosed."[14] The enclosure consisted of a program or prospectus of the "Carmago Ballet."

V

I return to the highway. As stated above, our first stop is at the *Tract on Monetary Reform* (1923). Since, with Keynes, practical advice was the goal and beaconlight of analysis, I will do what in the case of other economists I should consider an offense to do, *viz.*, invite readers to look first at what it was he advocated. It was, in substance, stabilization of

[13] The literature of philosophy and economics attracted him most. In this pursuit Professor Piero Sraffa became to him a much-appreciated ally. The best example I can offer of results is the edition of Hume's abstract of his *Treatise on Human Nature* "reprinted with an Introduction by J. M. Keynes and P. Sraffa," 1938. The Introduction is a curious monument of philological ardor.

[14] The acquaintance, a most disorderly person, does not keep letters. The exact wording of Keynes's note can therefore not be verified. But I am positive that it contained a single brief sentence and that the import of this sentence was as stated. It must have been about ten or fifteen years ago, perhaps more.—In his last years, those artistic activities and tastes led to his being elected trustee of the National Gallery and Chairman of the Council for the Encouragement of Music and the Arts. More work!

the domestic price level for the purpose of stabilizing the domestic business situation, secondary attention being paid also to the means of mitigating short-run fluctuations of foreign exchange. In order to achieve this he recommended that the monetary system created by the necessities of warfare should be carried over into the peace economy, the boldest of the various suggestions offered—with an evident trepidation quite unlike him—being the separation of the note issue from the gold reserve which he wished, however, to retain and of which he was anxious to emphasize the importance.

There are two things in this piece of advice that should be carefully noticed: first, its specifically English quality; second, ex visu *of England's short-run interests and of the kind of Englishman the adviser was*, its sober wisdom and conservativism.[15] It cannot be emphasized too strongly that Keynes's advice was in the first instance always English advice, born of English problems even where addressed to other nations. Barring some of his artistic tastes, he was surprisingly insular, even in philosophy, but nowhere so much as in economics. And, he was fervently patriotic—of a patriotism which was indeed quite untinged by vulgarity but was so genuine as to be subconscious and therefore all the more powerful to impart a bias to his thought and to exclude full understanding of foreign (also American) viewpoints, conditions, interests, and especially creeds. Like the old free-traders, he always exalted what was at any moment truth and wisdom for England into truth and wisdom for all times and places.[16] But we can not stop at this. In order to locate the standpoint from which his advice was given it is further necessary to remember that he was of the high intelligentsia of England, unattached to class or party, a typical pre-war intellectual, who rightly claimed, for good and ill, spiritual kinship with the Locke-Mill connection.

What was it, then, that this patriotic English intellectual beheld? The generalization we have already noticed in the pages of the *Consequences*. But England's case was more specific than that. She had not emerged from the war as she had emerged from the war of the Napoleonic era. She had emerged impoverished; she had lost many of her opportunities for the moment and some of them for good. Not only this, but her social fabric had been weakened and had become rigid. Her taxes and wage rates were incompatible with vigorous development, yet there was nothing that could be done about it. Keynes was not given to vain regrets. He was not in the habit of bemoaning what could not be changed. Also he was not the sort of man who would bend the full force of his mind to the individual problems of coal, textiles, steel, shipbuilding

[15] It should surprise no one that he was eventually (1942) elected director of the Bank of England.

[16] This also explains what his opponents called his inconsistency.

(though he did offer some advice of this kind in his current articles). Least of all was he the man to preach regenerative creeds. He was the English intellectual, a little *deraciné* and beholding a most uncomfortable situation. He was childless and his philosophy of life was essentially a short-run philosophy. So he turned resolutely to the only "parameter of action" that seemed left to him, both as an Englishman and as the kind of Englishman he was—monetary management. Perhaps he thought that it might heal. He knew for certain that it would sooth—and that return to a gold system at pre-war parity was more than *his* England could stand.

If only people could be made to understand this, they would also understand that practical Keynesianism is a seedling which cannot be transplanted into foreign soil: it dies there and becomes poisonous before it dies. But in addition they would understand that, left in English soil, this seedling is a healthy thing and promises both fruit and shade. Let me say once and for all: all this applies to every bit of advice that Keynes ever offered. For the rest, the advocacy of monetary management in the *Tract* was anything but revolutionary. There was, however, a novel emphasis on it as a means of general economic therapeutics. And concern with the saving-investment mechanism is indicated in the first lines of the Preface and throughout the first chapter.[17] Thus, though the immediate task before the author prevented him from going very far into these matters, the book does indicate further advance toward the *General Theory*.

Analytically, Keynes accepted the quantity theory which "is fundamental. Its correspondence with facts is not open to question" (p. 81). All the more important is it for us to realize that this acceptance, resting as it does on the very common confusion between the quantity theory and the equation of exchange, meant much less than it seems to mean exactly as Keynes's later repudiation of the quantity theory means much less than it seems to mean. What he intended to accept was the equation of exchange—in its Cambridge form—which, whether defined as an identity or as an equilibrium condition, does not imply any of the propositions characteristic of the quantity theory in the strict sense. Accordingly, he felt free to make velocity—or k, its equivalent in the Cambridge equation—a variable of the monetary problem, very properly giving Marshall credit for this "development of the traditional way of considering the matter" (p. 86). This is the Liquidity Preference in embryonic form. Keynes overlooked that this theory can be traced back

[17] See, *e. g.*, the highly characteristic passages on p. 10, and also the description of the "investment system" on p. 8, which anticipates some of the very inadequacies of the analysis of the *General Theory*. Even then, and indeed from first to last, Keynes displayed a curious reluctance to recognize a very simple and obvious fact and to express it by the no less simple and obvious phrase, that typically industry is financed by banks.

to Cantillon—at least—and that it had been developed, though sketchily, by Kemmerer,[18] who said that "large sums of money are continually being hoarded" and that "the proportion of the circulating medium which is hoarded . . . is not constant." We cannot go into the many excellent things in the *Tract*, *e.g.*, the masterly section on the Forward Market in Exchanges (Chap. III, sec. IV) and on Great Britain (Chap. V, sec. I) which it is impossible to admire too highly. We must hurry on to our "second stop" on the road to the *General Theory*, the *Treatise on Money* (1930).

With the exception of the *Treatise on Probability*, Keynes never wrote another work in which the hortatory purpose is less visible than it is in the *Treatise on Money*. It is there all the same, and not confined to the last book (VII), in which, among other things, we find all the essentials of Bretton Woods—what an extraordinary achievement! Primarily, however, those two volumes are no doubt Keynes's most ambitious piece of genuine research, of research so brilliant and yet so solid that it is a thousand pities that the harvest was garnered before it was ripe. If only he had learned something from Marshall's craving for "impossible perfection" instead of lecturing him about it! (*Essays in Biography*, pp. 211–12).[19] Moreover, Professor Myrdal's gentle sneer at "that Anglo-Saxon kind of unnecessary originality" is amply justified.[20] Nevertheless, the book was the outstanding performance in its field and day. All I can do, however, is to collect the most important signposts that point toward the *General Theory*.[21]

[18] E. W. Kemmerer, *Money and Credit Instruments* (1907), p. 20. But on p. 193 of the *Tract*, Keynes commits himself to the untenable statement that "the internal price level is mainly determined by the amount of credit created by the banks" and from this he never departed. To the end, this credit remained for him an independent variable, given to the economic process, though determined, not by gold production as it was of old but either by the banks or by the "monetary authority" (Central Bank or Government). This, however—considering quantity of money as "given"—is one of the characteristic features of the quantity theory in the strict sense. Hence my statement in the text that he never abandoned the quantity theory as completely as he thought he did.

[19] A semi-apologetic passage in the Preface of the *Treatise* shows that he was not unaware of the fact that he was offering half-baked bread.

[20] Gunnar Myrdal, *Monetary Equilibrium* (English tranlsation, by Bryce and Stolper [1939], of a German version of the Swedish original that appeared in the *Ekonomisk Tidskrift* in 1931), p. 8. Myrdal's protest was not, of course, made on his own behalf but on behalf of Wicksell and the Wicksellian group. But a similar protest would have been in order on behalf of Böhm-Bawerk and his followers, especially of Mises and Hayek. The latter's *Geldtheorie und Konjunkturtheorie* had been published, it is true, only in 1929. But Böhm-Bawerk's work was available in English, and Taussig's *Wages and Capital* dates from 1896. Nevertheless, Keynes wrote the capital theory of Book VI exactly as if they had never lived. But there was no obliquity in this. He simply did not know. Proof of his good faith is the ample credit he gave to all authors he did know, Pigou and Robertson among them.

[21] This, of course, involves injustice to the work as a whole, and in particular to the first two books: the conventional but nonetheless brilliant introduction (Nature of Money, Book I) and the almost independent treatise on price levels (Value of Money, Book II) which is full

There is, first, the conception of the theory of money as the theory of the economic process as a whole that was to be fully developed in the *General Theory*. This conception is, second, embedded in the vision or diagnosis of the contemporaneous state of the economic process that never changed from the *Consequences*. Third, saving and investment decisions are resolutely separated, quite as resolutely as in the *General Theory*, and private thrift is well established in its rôle of villain of the piece. The recognition extended to the work of "Mr. J. A. Hobson and others" (Vol. I, p. 179) is highly significant in this respect. And we learn that a thrift campaign is not the way to bring down the rate of interest (*e.g.*, Vol. II, p. 207). Differences in conceptualization—sometimes only in terminology—obscure but do not eliminate the fundamental identity of the ideas the author strives to convey. Thus, fourth, much of the argument runs in terms of the Wicksellian divergence between the "natural" and the "money" rate of interest. To be sure, the latter is not yet *the* rate of interest, and neither the former nor profits are as yet turned into the "marginal efficiency of capital." But the argument clearly suggests both steps. Fifth, the emphasis upon expectations, upon the "bearishness" that is not yet liquidity preference from the speculative motive, and the theory that the fall in money wage rates in depression ("reduction in the rate of efficiency-earnings") will tend to reëstablish equilibrium *if and because it will act on interest (bank rate) by reducing the requirements of Industrial Circulation*—all these and many other things (bananas, widows' cruses, Danaïdes' jars) read like imperfect and embarrassed first statements of *General Theory* propositions.

VI

The *Treatise* was not a failure in any ordinary sense of the word. Everybody saw its points and, with whatever qualifications, paid his respects to Keynes's great effort. Even damaging criticism, such as Professor Hansen's criticism of the Fundamental Equations,[22] or Professor von Hayek's criticism of Keynes's basic theoretical structure,[23] were as a rule tempered with well-deserved eulogy. But from Keynes's own standpoint it was a failure, and not only because its reception did not

of suggestive ideas. It must be remembered—and this is really the most fundamental difference between the *Treatise* and the *General Theory*—that the work professes to be an analysis of the dynamics of price levels, "of the way in which the fluctuations of the price level actually come to pass" (Vol. I, p. 152), though in reality it is much more than this.

[22] Alvin H. Hansen, "A Fundamental Error in Keynes' Treatise on Money," this *Review*, 1930; and Hansen and Tout, "Investment and Saving in Business Cycle Theory," *Econometrica*, 1933.

[23] F. A. von Hayek, "Reflections on the Pure Theory of Money of Mr. Keynes," I and II, *Economica*, 1931 and 1932. Hayek went so far as to speak of an "enormous advance." Nevertheless Keynes replied not without irritation. As he himself remarked on another occasion, authors are difficult to please.

measure up to his standard of success. It had somehow missed fire—it had not really made a mark. And the reason was not far to seek: he had failed to convey the essence of his own personal message. He had written a treatise and, for the sake of systematic completeness, overburdened his text with material about price indices, the *modus operandi* of bank rates, deposit creation, gold and what not all of which, whatever its merits, was akin to current doctrine and hence, for his purpose, not sufficiently distinctive. He had entangled himself in the meshes of an apparatus that broke down each time he attempted to make it grind out his own meanings. There would have been no point in trying to improve the work in detail. There would have been no point in trying to fight criticisms, the justice of many of which he had to admit. There was nothing for it but to abandon the whole thing, hull and cargo, to renounce allegiances and to start afresh. He was quick to learn the lesson.

Resolutely cutting himself off from the derelict, he braced himself for another effort, the greatest of his life. With brilliant energy he took hold of the essentials of his message and bent his mind to the task of forging a conceptual apparatus that would express these and—as nearly as possible—nothing else. He succeeded to his satisfaction. And so soon as he had done so—in December, 1935—he buckled on his new armor, unsheathed his sword and took the field again, boldly claiming that he was going to lead economists out of errors of 150 years' standing and into the promised land of truth.

Those around him were fascinated. While Keynes was remodeling his work, he currently talked about it in his lectures, in conversation, in the "Keynes Club" that used to meet in his rooms at King's. And there was a lively give and take. " . . . I have depended on the constant advice and constructive criticism of Mr. R. F. Kahn. There is a great deal in this book which would not have taken the shape it has except at his suggestion" (*General Theory*, Preface, p. viii). Considering all the implications of Richard Kahn's article on "The Relation of Home Investment to Unemployment," published in the *Economic Journal* as early as June, 1931, we shall certainly not suspect those two sentences of overstatement. Some credit was also given, in the same place, to Mrs. Robinson, Mr. Hawtrey, and Mr. Harrod.[24] There were others—some

[24] Mr. Hawtrey's relation to the book can never have been any other than that of an understanding and, up to a point, sympathetic critic. He never was, of course, a Keynesian. From the *Tract* to the *Treatise*, Keynes was a Hawtreyan. Mr. Harrod may have been moving independently toward a goal not far from that of Keynes, though he unselfishly joined the latter's standard after it had been raised. Justice imposes this remark. For that eminent economist is in some danger of losing the place in the history of economics that is his by right, both in respect to Keynesianism and in respect to Imperfect Competition. Not less do I feel bound to advert to Mrs. Robinson's claims. It is highly revelatory of the attitude of the academic mind to women that she was excluded from the above-mentioned seminar (at least she was not invited on the one occasion when I addressed it). But she was in the midst of things. Proofs of this are her

of the most promising young Cambridge men among them. And they all talked. Glimpses of the new light began to be caught by individuals all over the Empire and in the United States. Students were thrilled. A wave of anticipatory enthusiasm swept the world of economists. When the book came out at last, Harvard students felt unable to wait until it would be available at the booksellers: they clubbed together in order to speed up the process and arranged for direct shipment of a first parcel of copies.

VII

The social vision first revealed in the *Economic Consequences of the Peace*, the vision of an economic process in which investment opportunity flags and saving habits nevertheless persist, is theoretically implemented in the *General Theory of Employment, Interest, and Money* (Preface dated December 13, 1935) by means of three schedule concepts: the consumption function, the efficiency-of-capital function, and the liquidity-preference function.[25] These together with the given wage-unit and the equally given quantity of money "determine" income and *ipso facto* employment (if and so far as the latter is uniquely determined by the former), the great dependent variables to be "explained." What a *cordon bleu* to make such a sauce out of such scanty material![26] Let us see how he did it.

"Parable on Saving and Investment" (*Economica*, February 1933), an article which was a most skillfully fought rear-guard action covering retreat from the *Treatise;* and, still more significant of her rôle in the evolution of the *General Theory*, her "Theory of Money and the Analysis of Output," published as early as October, 1933, in the *Review of Economic Studies*.

[25] Distinctive terminology helps to drive home the points an author wishes to make and to focus his readers' attention. This (though nothing else) justifies the re-naming of Irving Fisher's marginal rate of return over cost—the priority of which Keynes fully recognized—and also the use of the phrase, liquidity preference, instead of the usual one, hoarding. Consumption function is certainly a better shell for Keynes's meaning than the Malthusian phrase, Effective Demand, which he also used, for nothing but confusion can come from using the concepts of Demand and Supply outside of the domain (partial analysis) in which they carry rigorously definable meaning. It is not without interest to note that Keynes called his assumptions about the forms of the consumption and liquidity preference functions Psychological Laws. This was of course, another emphasizing device. But no tenable meaning can be attached to it, not even so much meaning as attaches to the "law of satiable wants." In this, as in some other respects, Keynes was distinctly old-fashioned.

[26] It is really an injustice to Keynes's achievement to reduce it to the bare bones of its logical structure and then to reason on these bones as if they were all. Nevertheless, great interest attaches to the attempts that have been made to cast his system into exact form. I want in particular to mention: W. B. Reddaway's review in the *Economic Record*, 1936: R. F. Harrod, "Mr. Keynes and Traditional Theory," *Econometrica*, January, 1937; J. E. Meade, "A Simplified Model of Mr. Keynes' System," *Review of Economic Studies*, February, 1937; J. R. Hicks, "Mr. Keynes and the 'Classics'," *Econometrica*, April, 1937; O. Lange, "The Rate of Interest and the Optimum Propensity to Consume," *Economica*, February, 1938; P. A. Samuelson, "The Stability of Equilibrium," *Econometrica*, April, 1941 (with dynamical reformulation); and A. Smithies, "Process Analysis and Equilibrium Analysis," *Econometrica*, January, 1942 (also a study in the dynamics of the Keynesian schema). In the hands of writers

(1) The first condition for simplicity of a model is, of course, simplicity of the vision which it is to implement. And simplicity of vision is in part a matter of genius and in part a matter of willingness to pay the price in terms of the factors that have to be left out of the picture. But if we place ourselves on the standpoint of Keynesian orthodoxy and choose to accept his vision of the economic process of our age as the gift of genius whose glance pierced through the welter of surface phenomena to the simple essentials that lie below, then there can be little objection to his aggregative analysis that produced his results.

Since the aggregates chosen for variables are, with the exception of employment, monetary quantities or expressions, we may also speak of monetary analysis and, since national income is the central variable, of income analysis. Richard Cantillon was the first, I think, to indicate a *full-fledged* schema of aggregative, monetary, and income analysis, the one worked out by François Quesnay in his *tableau économique*. Quesnay, then, is the true predecessor of Keynes, and it is interesting to note that his views on saving were identical with those of Keynes: the reader can easily satisfy himself of this by looking up the *Maximes*. It should, however, be added that the aggregative analysis of the *General Theory* does not stand alone in modern literature: it is a member of a family that had been rapidly growing.[27]

(2) Keynes further simplified his structure by avoiding, as much as possible, all complications that arise in process analysis. The exact skeleton of Keynes's system belongs, to use the terms proposed by Ragnar Frisch, to macrostatics, not to macrodynamics. In part this limitation must be attributed to those who formulated his teaching rather than to his teaching itself which contains several dynamic elements, expectations in particular. But it is true that he had an aversion to "periods" and that he concentrated attention upon considerations of static equilibrium. This removed an important barrier to success—a difference equation as yet affects economists as the face of Medusa.

(3) Furthermore, he confined his *model*—though not always his argument—to the range of short-run phenomena. While points (1) and (2) are commonly emphasized, it does not seem to be realized sufficiently how very strictly short run his model is and how important this fact is for the whole structure and all the results of the *General Theory*. The pivotal restriction is that not only production functions and not only methods of production but also the quantity and quality of plant and

less in sympathy with the spirit of Keynesian economics, some of the results presented in these papers might have been turned into serious criticisms. This is still more true of F. Modigliani, "Liquidity Preference and the Theory of Interest and of Money," *Econometrica*, January, 1944.

[27] The quickest way to learn how far aggregative analysis had progressed before the publication of the *General Theory* is to read Tinbergen's survey article in *Econometrica*, July, 1935.

equipment are not allowed to change, a restriction which Keynes never tires of impressing upon the reader at crucial turns of his way (see, *e.g.*, p. 114 and p. 295).[28]

This permits many otherwise inadmissible simplifications: for instance, it permits treating employment as approximately proportional to income (output) so that the one is determined as soon as the other is. But it limits applicability of this analysis to a few years at most— perhaps the duration of the "40 months' cycle"—and, in terms of phenomena, to the factors that *would* govern the greater or smaller utilization of an industrial apparatus *if* the latter remains unchanged. *All the phenomena incident to the creation and change in this apparatus, that is to say, the phenomena that dominate the capitalist processes, are thus excluded from consideration.*

As a picture of reality this model becomes most nearly justifiable in periods of depression when also liquidity preference comes nearest to being an operative factor in its own right. Professor Hicks was therefore correct in calling Keynes's economics the economics of depression. But from Keynes's own standpoint, his model derives additional justification from the secular stagnation thesis. Though it remains true that he tried to implement an essentially long-run vision by a short-run model, he secured, to some extent, the freedom for doing so by reasoning (almost) exclusively about a stationary process or, at all events, a process that stays at, or oscillates about, levels of which a stationary full-employment equilibrium is the ceiling. With Marx, capitalist evolution issues into breakdown. With J. S. Mill, it issues into a stationary state that works without hitches. With Keynes, it issues into a stationary state that constantly threatens to break down. Though Keynes's "breakdown theory" is quite different from Marx's, it has an important feature in common with the latter: in both theories, the breakdown is motivated by causes inherent to the working of the economic engine, not by the action of factors external to it. This feature naturally qualifies Keynes's theory for the rôle of "rationalizer" of anti-capitalist volition.

(4) Quite consciously, Keynes refused to go beyond the factors that are the *immediate* determinants of income (and employment). He himself recognized freely that these immediate determinants which may "sometimes" be regarded as "ultimate independent variables . . . would be capable of being subjected to further analysis, and are not, so to speak, our ultimate atomic independent elements" (p. 247). This turn of phrase seems to suggest no more than that economic aggregates derive their meaning from the component "atoms." But there is more to

[28] Strictly, some change in the quantity of equipment must be admitted, but it is conceived of as so small, at any given point of time, that its effect upon the existing industrial structure and its output can be neglected.

it than this. We can, of course, greatly simplify our picture of the world and arrive at very simple propositions if we are content with arguments of the form: *given* A, B, C . . . , then D will depend upon E. If A, B, C . . . are things external to the field under investigation, there is no more to be said. If, however, they are part of the phenomena to be explained, then the resulting propositions about what determines what may easily be made undeniable and acquire the semblance of novelty without meaning very much. This is what Professor Leontief has called implicit theorizing.[29] But for Keynes, as for Ricardo,[30] arguments of this type were but emphasizing devices: they served to single out and by so doing to emphasize a particular relation. Ricardo did not say: "Under present English conditions, as I see them, free trade in foodstuffs and raw materials will, everything considered, tend to raise the rate of profit." Instead he said: "The rate of profit depends upon the price of wheat."

(5) Forceful emphasis on a small number of points that seemed to Keynes to be both important and inadequately appreciated being the keynote of the *General Theory*, we find other emphasizing devices besides the one just mentioned. Two we have noticed already.[31] Another is what critics are apt to call overstatements—overstatements, moreover, which cannot be reduced to the defensible level, because results depend precisely upon the excess. But it must be remembered not only that, from Keynes's standpoint, these overstatements were little more than means to abstract from non-essentials but also that part of the blame for them lies at our own door: we, as a body, simply will not listen unless a point be hammered in with one-sided energy. Granting, for the sake of argument, that the points in question were actually important enough to merit being hammered in, and remembering that the gems of unqualified overstatement do not occur in the *General Theory* itself but in the writings of some of Keynes's followers, we shall appreciate this method of flavoring what I have described as the sauce.

Three examples must suffice. First, every economist knows—if he did not he could not help learning it from conversation with businessmen —that any sufficiently general change in money wage rates will influence prices in the same direction. Nevertheless, it was not the practice of economists to take account of this in the theory of wages. Second, every economist *should* have known that the Turgot-Smith-J. S. Mill theory of the saving and investment mechanism was inadequate and that, in particular, saving and investment decisions were linked together too closely. Yet, had Keynes presented a properly qualified statement of

[29] *Cf.* his article under that title in the *Quarterly Journal of Economics*, Vol. 51, pp. 337–51.

[30] The intellectual affinity of Keynes with Ricardo merits notice. Their methods of reasoning were closely similar, a fact that has been obscured by Keynes's admiration of Malthus's anti-saving attitude and by his consequent dislike of Ricardo's *teaching*.

[31] See above, n. 25.

their true relation, would he have elicited more from us than a mumble to the effect: "Yes . . . that's so . . . of some importance in certain cyclical situations. . . . What of it?" Third, let any reader look up pages 165 and 166 of the *General Theory*—the first two pages of Chapter 13, on the "General Theory of Interest." What will he find? He will find that the theory, according to which the investment demand for savings and the supply of savings that is governed by time-preference ("which I have called the propensity to consume") is equated by the rate of interest "breaks down" because "it is impossible to deduce the rate of interest merely from a knowledge of these two factors." Why is this impossible? Because the decision to save does not *necessarily* imply a decision to invest: we must also take account of the possibility that the latter does not follow or not follow promptly. I will lay any odds that this perfectly reasonable improvement in the tenor of current teaching would not have greatly impressed us had he left the matter at this. It had to be liquidity preference to the fore—and interest *nothing* but the reward for parting with money (which cannot be so on the showing of his own text)— and so on in a well-known sequence in order to make us sit up. And we were made to sit up to some purpose. For many more of us will now listen to the proposition that interest is a purely monetary phenomenon than were ready to listen 35 years ago.

But there is one word in the book that cannot be defended on these lines—the word "general." Those emphasizing devices—even if quite unexceptionable in other respects—cannot do more than individuate very special cases. Keynesians may hold that these special cases are the actual ones of our age. They cannot hold more than that.[32]

(6) It seems evident that Keynes *wished* to secure his major results without appeal to the element of rigidity, just as he spurned the aid he might have derived from imperfections of competition.[33] There were points, however, at which he was unable to do so, especially the point at which the rate of interest has to become rigid in the downward direction because the elasticity of the liquidity-preference demand for money becomes infinite there. And at other points, rigidities stand in reserve, to be appealed to in case the front-line argument fails to convince. It is, of course, always possible to show that the economic system will cease to work if a sufficient number of its adaptive organs are paralyzed. Keynesians like this fire escape no more than do other theorists. Nevertheless, it is not without importance. The classical example is equilibrium under-employment.[34]

[32] This has first been pointed out by O. Lange, *op. cit.*, who also paid due respect to the only truly general theory ever written—the theory of Léon Walras. He neatly showed that the latter covers Keynes's as a special case.

[33] The latter factor was, however, inserted by Mr. Harrod.

[34] I have sometimes wondered why Keynes attached so much importance to proving that

(7) I must, finally, advert to Keynes's brilliance in the forging of individual tools of analysis. Look, for instance, at the skillful use made of Kahn's multiplier or at the felicitous creation of the concept of user cost which is so helpful in defining his concept of income and may well be recorded as a novelty of some importance. What I admire most in these and other conceptual arrangements of his is their *adequacy:* they fit his purpose as a well-tailored coat fits the customer's body. Of course, precisely because of this, they possess but limited usefulness irrespective of Keynes's particular aims. A fruit knife is an excellent instrument for peeling a pear. He who uses it in order to attack a steak has only himself to blame for unsatisfactory results.

VIII

The success of the *General Theory* was instantaneous and, as we know, sustained. Unfavorable reviews, of which there were many, only helped. A Keynesian school formed itself, not a school in that loose sense in which some historians of economics speak of a French, German, Italian school, but a genuine one which is a sociological entity, namely, a group that professes allegiance to One Master and One Doctrine, and has its inner circle, its propagandists, its watchwords, its esoteric and its popular doctrine. Nor is this all. Beyond the pale of orthodox Keynesianism there is a broad fringe of sympathizers and beyond this again are the many who have absorbed, in one form or another, readily or grudgingly, some of the spirit or some individual items of Keynesian analysis. There are but two analogous cases in the whole history of economics—the Physiocrats and the Marxists.

This is in itself a great achievement that claims admiring recognition from friends and foes alike and, in particular, from every teacher who experiences the enlivening influence in his classes. There cannot be any doubt, unfortunately, that in economics such enthusiasm—and correspondingly strong aversions—never flare up unless the cold steel of analysis derives a temperature not naturally its own from the real or putative political implications of the analyst's message. Let us therefore cast a glance at the ideological bearings of the book. Most orthodox

there may—and under his assumptions generally will—be less than full employment in *perfect equilibrium of perfect competition.* For there is such an ample supply of verifiable explanatory factors to account for the actual unemployment we observe at any time that only the theorist's ambition can induce us to wish for more. The question of the presence of involuntary unemployment in perfect equilibrium of perfect competition, a state that even the straw man whom Keynes called "classical economist" never believed in as a reality, is no doubt of great theoretical interest. But practically, Keynes should have fared equally well with the unemployment that may exist in a permanent state of disequilibrium. As it is, he clearly failed to prove his case. But inflexibility of wages in the downward direction stands ready to lend its aid. The theoretical question itself is the subject of a discussion that suffers from the failure of participants to distinguish between the various theoretical issues involved. But we cannot enter into this.

Keynesians are "radicals" in one sense or another. The man who wrote the essay on the Villiers Connection was not a radical in *any* ordinary sense of the word. What is there in his book to please them? In an excellent article in this *Review*, Professor Wright[35] has gone so far as to say that "a conservative candidate could conduct a political campaign largely on quotations from the *General Theory*." True, but true only if this candidate knows how to use asides and qualifications. Keynes was no doubt too able an advocate ever to deny the obvious. To some extent, though probably to a small extent only, his success is precisely due to the fact that even in his boldest rushes he never left his flanks quite unguarded—as unwary critics of either his policies or his theories are apt to discover to their cost.[36] Disciples do not look at qualifications. They see one thing only—an indictment of private thrift and the implications this indictment carries with respect to the managed economy and inequality of incomes.

In order to appreciate what this means, it is necessary to recall that, as a result of a long doctrinal development, saving had come to be regarded as the last pillar of the bourgeois argument. In fact, old Adam Smith had already disposed pretty much of every other: if we analyze his argument closely—I am speaking, of course, only of the ideological aspects of his system—it amounts to all-around vituperation directed against "slothful" landlords and grasping merchants or "masters" plus the famous eulogy of parsimony. And this remains the keynote of most non-Marxist economic ideology until Keynes. Marshall and Pigou were in this boat. They, especially the latter, took it for granted that inequality, or the existing degree of inequality, was "undesirable." But they stopped short of attack upon the pillar.

Many of the men who entered the field of teaching or research in the twenties and thirties had renounced allegiance to the bourgeois scheme of life, the bourgeois scheme of values. Many of them sneered at the

[35] D. McC. Wright, "The Future of Keynesian Economics," *Am. Econ. Rev.*, Vol. XXXV, No. 3 (June, 1945), p. 287. This article, in spite of some differences of opinion, usefully complements my own in many points into which considerations of space forbid me to enter.

[36] This is why there is such ample room for that turn of phrase that occurs so often in the Keynesian literature: "Keynes did not *really* say this" or "Keynes did not *really* deny that." In the *General Theory* most of the explicit qualifications occur in chapters 18 and 19. But the only possible reference to all the implicit ones is *passim*. The logic of the classical system is not *really* impugned (p. 278). Even Say's law (in the sense defined on p. 26) is not completely thrown out; even the existence of a mechanism that tends to equilibrate saving and investment decisions—and the rôle of interest rates in this mechanism—and even the possibility that a reduction of money wages may stimulate output is not absolutely denied; though, to be sure, only in application to very special cases, the validity of the first and the existence of the other two are occasionally recognized. Critics are therefore in constant danger of being convicted of "gross misrepresentation" exactly as unwary critics of Malthus's first Essay invariably run into a volley of quotations from the second edition—in which, in fact, Malthus went far toward explaining away Malthusianism. But it is impossible to go into all this here. In the article quoted, Professor Wright offers instructive examples.

profit motive and at the element of personal performance in the capitalist process. But so far as they did not embrace straight socialism, they still had to pay respect to saving—under penalty of losing caste in their own eyes and ranging themselves with what Keynes so tellingly called the economist's "underworld." But Keynes broke their fetters: here, at last, was theoretical doctrine that not only obliterated the personal element and was, if not mechanistic itself, at least mechanizable, but also smashed the pillar into dust; a doctrine that may not actually say but can easily be made to say both that "who tries to save destroys real capital" and that, *via* saving, "the unequal distribution of income is the ultimate cause of unemployment."[37] *This* is what the Keynesian Revolution amounts to. Thus defined, the phrase is not inappropriate. And *this*, and only this, explains and, to some extent, justifies Keynes's change of attitude toward Marshall which is neither understandable nor justifiable upon any scientific ground.

But though this attractive wrapper made Keynes's gift to scientific economics more acceptable to many, it must not divert attention from the gift itself. Before the appearance of the *General Theory*, economics had been growing increasingly complex and increasingly incapable of giving straightforward answers to straightforward questions. The *General Theory* seemed to reduce it once more to simplicity, and to enable the economist once more to give simple advice that everybody could understand. But, exactly as in the case of Ricardian economics, there was enough to attract, to inspire even, the sophisticated. The same system that linked up so well with the notions of the untutored mind proved satisfactory to the best brains of the rising generation of theorists. Some of them felt—still feel for all I know—that all other work in "theory" should be scrapped. All of them paid homage to the man who had given them a well-defined model to handle, to criticize, and to improve—to the man whose work symbolizes at least, even though it may not embody, what they wanted to see done.

And even those who had found their bearings before, and on whom the *General Theory* did not impinge in their formative years, experienced the salutary effects of a fresh breeze. As a prominent American economist put it in a letter to me: "It (the *General Theory*) did, and does, have something which supplements what our thinking and methods of analysis would otherwise have been. It does not make us Keynesians, it makes us better economists." Whether we agree or not, this expresses the essential point about Keynes's achievement extremely well. In particular, it explains why hostile criticism, even if

[37] And, after all, a glance at pp. 372–73 and 376 of the *General Theory* will convince anyone that Keynes actually came pretty near to authorizing both statements. One must be as punctiliously conscientious as is Professor Wright in order to say that he did not actually do so.

successful in its attack upon individual assumptions or propositions, is yet powerless to inflict fatal injury upon the structure as a whole. As with Marx, it is possible to admire Keynes even though one may consider his social vision to be wrong and every one of his propositions to be misleading.

I am not going to grade the *General Theory* as if it were a student's examination book. Moreover, I do not believe in grading economists—the men whose names one might think of for comparison are too different, too incommensurable. Whatever happens to the doctrine, the memory of the man will live—outlive both Keynesianism and the reaction to it.

At this I will leave it. Everyone knows the stupendous fight the valiant warrior put up for the work that was to be his last.[38] Everyone knows that during the war he entered the Treasury again (1940) and that his influence grew, along with that of Churchill, until nobody thought of challenging it. Everyone knows of the honor that has been conferred upon the House of Lords. And, of course, of the Keynes Plan, Bretton Woods, and the English loan. But these things will have to engage some scholarly biographer who has all the materials at his disposal.

[38] His last great work, that is. He wrote many minor pieces almost to his dying day.

MARGINAL ANALYSIS AND EMPIRICAL RESEARCH

By FRITZ MACHLUP*

Certain critics of "conventional" economic theory from time to time voice surprise at the general acceptance of marginalism and at "the confidence of the textbook writers in the validity of the marginal analysis."[1] They disapprove of allowing the principle of marginalism to play the rôle of a fundamental postulate in the teaching of economics.

Marginalism Implied in the Economic Principle

These critics would probably revolt against all those definitions of economics which contain marginalism as an implicit criterion. Marginalism, as the logical process of "finding a maximum," is clearly implied in the so-called *economic principle*—striving to achieve with given means a maximum of ends.

Economics in a narrow sense is confined to such aspects of conduct as can be explained with reference to the principles of maximizing satisfaction, income, or profit. Under definitions of this sort any deviations from the marginal principle would be extra-economic. Yet, to refuse to deal with any type of business conduct that cannot qualify by the strict standards of marginalism may justly be regarded as a lazy man's excuse. If certain types of business conduct can be found in reality with regularity and consistency, it is undoubtedly desirable to analyze them regardless of their "economic rationale."[2] And if some of these allegedly "non-economic" aspects of conduct can be explained within the conceptual framework of economics, one may prefer definitions which admit behavior types not strictly subject to marginal analysis among the proper subject matter of economic theory.

Interpretation of Business Behavior

To recognize the study of certain types of merely "traditional" conduct as legitimately within the province of economic theory is one thing; it is another to accept as correct the interpretations of business behavior offered by the critics of marginal analysis. Unable to see how marginal analysis can be applied to their material, these critics have concluded that marginalism should be discarded. It can be shown, however, that

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[1] Richard A. Lester, "Shortcomings of Marginal Analysis for Wage-Employment Problems," *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (Mar., 1946), p. 63.

[2] *Cf.* the admonition that "if an economist finds a procedure widely established in fact, he ought to regard it with more respect than he would be inclined to give in the light of his own analytic method." R. F. Harrod, "Price and Cost in Entrepreneurs' Policy," *Oxford Economic Papers*, No. 2 (1939), p. 7.

the alleged "inapplicability" of marginal analysis is often due to a failure to understand it, to faulty research techniques, or to mistaken interpretations of "findings."

This is not to deny that a goodly portion of all business behavior may be non-rational, thoughtless, blindly repetitive, deliberately traditional, or motivated by extra-economic objectives. But the material thus far presented as the result of empirical research has not proved what the analysts intended to prove. In some instances their findings were the result of careful research, based on a thorough knowledge of economic theory, but their interpretations were still questionable. In other instances the whole approach of the research project was so faulty that the findings as well as the interpretations are all but worthless except as targets for critical discussion.

I. Marginal Analysis of the Single Firm

Any attempt to "test" marginalist theory through empirical research presupposes full understanding of the theory. It is necessary to know precisely what the theory says, what it implies, and what it intends to do. Since it has been developed gradually over a period of more than a century,[3] it will not suffice to take any particular writer as one's authority or any particular exposition as one's text. Earlier versions lack the necessary refinements and methodological foundations; later formulations often take for granted necessary assumptions or qualifications made in previous expositions. To criticize the theory because of the errors and omissions in any treatise, however representative, is unfair.

The following statement of essential elements in the marginalist analysis of the single business firm attempts merely to give major emphasis to points often overlooked or misunderstood.

The Determination of Output and Employment

The theory of the "equilibrium of the single firm" is not as ambitious as is often believed. It does not attempt to give all the reasons why a given firm makes the type or quality of product which it makes; why it produces the output that it produces; why it employs the workers that it employs; or why it charges the prices that it charges. It is probably an understatement of the importance of the historical situation when Hall and Hitch modestly remark: "There is usually some element in the prices ruling at any time which can only be explained in the light of the history of the industry."[4] The phrase "usually some element" does

[3] Cournot was among the earlier expositors of marginal analysis of the single firm.

[4] R. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," *Oxford Economic Papers*, No. 2 (1939), p. 33.

not do justice to the part played by historical antecedents in the determination of product, output, employment, and prices. The rôle of the past in shaping the actual conditions under which the firm operates, in developing the routine of its responses to changes in conditions, and in impressing it with experiences which have taught it to size up and anticipate these changes as the basis for its decisions—this rôle is by no means denied by marginal analysis. The rôle of the past in the process of adjusting the present to the anticipated future is essential in all theory of human conduct. It is implied in the very attempt of constructing a pattern of behavior of the single firm.

Instead of giving a complete explanation of the "determination" of output, prices, and employment by the firm, marginal analysis really intends to explain the effects which certain *changes* in conditions may have upon the actions of the firm. What kind of changes may cause the firm to raise prices? to increase output? to reduce employment? What conditions may influence the firm to continue with the same prices, output, employment, in the face of actual or anticipated changes? Economic theory, static as well as dynamic, is essentially a theory of adjustment to change. The concept of equilibrium is a tool in this theory of change; the marginal calculus is its dominating principle.

A. *Marginal Revenue and Cost of Output*

Subjectivity of Cost and Revenue

The proposition that the firm will attempt to equate marginal cost and marginal revenue is logically implied in the assumption that the firm will attempt to maximize its profit (or minimize its losses). It should hardly be necessary to mention that all the relevant magnitudes involved—cost, revenue, profit—are subjective—that is, perceived or fancied by the men whose decisions or actions are to be explained (the business men)—rather than "objective"—that is, calculated by disinterested men who are observing these actions from the outside and are explaining them (statisticians and economists as theorists—not as consultants).

The marginal cost that guides the producer is the addition to his total cost which he expects would be caused by added production. An outside observer, if he had expert knowledge of the production techniques and full insight into the cost situation of the producing firm, might arrive at a different, "objective" figure of the firm's marginal cost; but what the observer thinks is not necessarily the same as what the producer thinks. The producer's actual decision is based on what he himself thinks; it is based on "subjective" cost expectations.

One may perhaps assume that the producer is intensely interested in knowing his cost and that, in general, he has the experience which

enables him to know it. Yet, one must not assume that all producers "really" know their cost in the sense in which an efficiency expert would determine it; several of them may lack the interest or experience; they may not find it worth their while to dig too deeply into the mysteries of their business. (After all, we know that there are good business men and bad, and that the majority is somewhere between good and bad.) But this does not invalidate the proposition that the producer is guided by marginal cost.[5]

The same thing is true with regard to price expectations and sales expectations. It is the "demand as seen by the seller" from which his revenue expectations stem. The increase in demand which is relevant in the analysis of the firm need not be "the real thing"; it may precede an "actual" increase in demand, lag behind it, or be entirely imaginary. The business man does what he does on the basis of what *he* thinks, regardless of whether you agree with him or not.

Marginal analysis of the firm should not be understood to imply anything but subjective estimates, guesses and hunches.

The Range of Price and Output Variations

Beginning students of economics who watch their instructor draw demand and cost curves covering half the blackboard may be misled into believing that the business man is supposed to visualize the possibilities of producing and selling amounts of output ranging from almost zero up to two or three times the amounts that he is currently producing and selling; that the business man is supposed to figure out how much he might be able to sell at prices several times as high as the current price, and how much at prices only one-half or one-third as high. The curve draftsman, indeed, seems to ascribe extraordinary powers of imagination to the business wizards.

Misunderstandings of this sort, and erroneous criticisms of marginal analysis, could be avoided if it were made clear to the students that the length of the curves, *i.e.*, the wide range they cover, was chiefly designed to enable those in the back rows of the class room to make out what goes on on the blackboard; and to permit them to practice curve analysis without using magnifying glasses. The range of possibilities—prices, sales, outputs—which a business man may have in mind is probably quite narrow. Rarely will a business man bother pondering the probable effects of a price increase or cut by 50 per cent; but he may easily think about what a 10 or 15 per cent price change might do to his sales; or what discount it might take to land some additional orders.

The principles of analysis are not altered by the realization that the

[5] One may wish, of course, to qualify any social implications of the proposition once the subjective character of the relevant cost data is recognized.

alternatives which business men weigh concerning prices or production volumes cover a much more moderate range than the curves which teachers of economics draw to depict the pattern of marginal calculus.

The Time-Range of Anticipations

In view of the known attempts to derive statistical cost curves from accounting data—which of necessity refer to conditions of the past—it is important to mention that the marginal cost and marginal revenue concepts in the analysis of the equilibrium of the firm refer to expectations of future conditions. To be sure, past experience is always in the background of anticipations of the future, and past accounting records may form a firm point of departure for evaluating prospective and hypothetical cost and revenue figures. But anticipations alone are the relevant variables in the marginal calculus of the firm.

What is the time-range of the significant anticipations? How far into the future do they reach, and what period, if any, is given special emphasis? Is tomorrow more important than next year or several years hence? Is it the "short run" or the "long run" which controls current action?

When a firm wishes to increase production, it usually has a choice of expanding the equipment and productive capacity of its plant or of stepping up the output of the existing plant with unchanged equipment. If productive capacity is already well utilized, the marginal cost of producing larger outputs will be higher in the existing establishment with unchanged equipment than in an establishment with adjusted, increased equipment. If several degrees of adjustment in the productive equipment are possible, several marginal cost functions will be "given" and several different outputs will be "the equilibrium output" under given sales expectations.

To cope with these problems economists have made the distinction between the "short period," assuming no adaptation of equipment, and the "long period," assuming complete adaptation of equipment. Students often believe that the latter period is called "long" because it takes a long time to expand the plant. This need not be the case. A better understanding of the concepts might be achieved by associating the degree of planned plant adjustment with the length of time for which the changed production volume is expected to be maintained. If an increased demand is expected to prevail for a short period only, it will not pay to invest in plant expansion, and "short-run cost" will determine output. On the other hand, if demand is expected to continue at the higher level for a sufficiently long period, an expansion of the establishment will be considered a profitable investment, and "long-run cost" will determine output. Needless to say, many intermediate periods, that

is, several degrees of plant adjustment with different marginal cost conditions, may exist.

On the basis of this reasoning one will recognize it as a misunderstanding to argue that short-run cost is of controlling influence on the ground that we always live and work in the short period. The duration for which demand conditions are expected to prevail will determine the relevant "period" of cost anticipations. Of course, this relevance is again subjectively determined, not by the "objective" judgment of the economist.

The time-range of the anticipations with regard to the demand and selling outlook is subject to similar considerations. It is a mistake to think that the relevant "period" for demand and marginal revenue expectations is determined by the length of time it takes for today's production to reach the market.[6] If a price reduction is apt to spoil the market for a long time to come, or a price increase to harm customer loyalty, the effects on future profits will hardly be neglected in considering current actions. If a firm were to regard a certain price change as a desirable step for the time being, but feared that a later reversal might be difficult or costly, it would weigh this anticipated future cost or loss against the short-run benefit.

Anticipations of this sort, complementary or competing with one another, are not exceptions to marginal analysis but are part and parcel of it. To be sure, when an instructor teaches graphical analysis, he will do well to abstract from complicated cost and revenue anticipations and to concentrate on those that can be neatly packed away in geometric curves.

The Numerical Definiteness of the Estimates

The geometric curves and arithmetic schedules by which the instructor presents marginal cost and marginal revenue of the firm seem to leave no room for doubt that these anticipations take the form of estimates of definite numerical values. While this may be necessary for teaching purposes, it should not mislead the student into believing that every action of the business man is in fact the result of a conscious decision, made after careful calculations of differential revenue and cost.

Business men do not always "calculate" before they make decisions, and they do not always "decide" before they act. For they think that they know their business well enough without having to make repeated calculations; and their actions are frequently routine.[7] But routine is based on principles which were once considered and decided upon and have then been frequently applied with decreasing need for conscious

[6] Richard A. Lester, *Economics of Labor* (New York, 1941), p. 181.

[7] See George Katona, "Psychological Analysis of Business Decisions and Expectations," *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (Mar., 1946), p. 53.

choices.[8] The feeling that calculations are not always necessary is usually based upon an ability to size up a situation without reducing its dimensions to definite numerical values.[9]

The business man who is persuaded to accept a large order with a price discount or some other concession usually weighs the probability that he will have to make the same concession to his other customers. This is one of the business man's considerations included in the "calculation" of marginal revenue. In order to explain this to the student, or to reduce it to curves and schedules, the economics teacher makes "exact" calculations; in order to make up his mind whether to take or reject the order, the business man ordinarily needs no arithmetic, mental or written, and indeed needs no concrete figures. Yet his reasoning or his routine behavior is most conveniently analyzed in terms of marginal revenue.

Where the marginal revenue is negative, that is to say, where gross receipts after accepting the additional order (with the price concession) would be smaller than without it, no further consideration is necessary. But if the dollar volume of sales can be increased by accepting the order (taking full account of all repercussions on future marketing possibilities), the business man must take another step in his reasoning: will it pay to make more sales in view of the additional cost of producing the larger output? If conditions have not changed, he will not have to make new calculations; if changes have occurred or are expected, some figuring may be required. But it is a type of figuring for which usually no accounting records are consulted, no memoranda prepared and of which no records are made. Often the business man can do this "figuring" in his head; if not, he may take a piece of scrap paper, jot down a few round numbers, reach his conclusion, and throw the paper in the waste basket.

The theorist's contention that such reasoning is typically based either on additional cost or on total cost—and hence most conveniently described in terms of marginal cost—is contradicted by certain empirical researchers who claim that most business men calculate on the basis of average cost even if they lose money by doing so. With this contradiction we shall deal later.

Non-Pecuniary Considerations

Marginal analysis of the equilibrium of the single firm rests on the assumption that the business firm attempts to maximize its profits. To

[8] Discussing the difference between "routine behavior" and "genuine decisions," Dr. Katona explains with regard to routine actions that "principles, well understood in their original context, tend to be carried over from one situation to another." *Ibid.*, p. 49. Genuine decisions are made when expectations "change radically." *Ibid.*, p. 53.

[9] Although I do not know either the width or length of my automobile, I am quite capable of making adequate comparisons between these magnitudes and the space between two parked cars, which I estimate again without thinking of feet, inches, or any numbers.

make this assumption is not to deny that the men who run a business may be motivated also by other considerations.

That a business man is motivated by considerations other than the maximization of money profits does not necessarily make his conduct "uneconomic." The economic theorist finds no difficulty in fitting into the pattern of "economic" conduct (that is, into the conceptual scheme of consistent maximization of satisfaction within a given preference system) the householder and consumer who makes donations to friends or the church; or the seller of labor services who chooses a badly-paying but less strenuous job in preference to one that pays more but calls for more exertion. Likewise, there is nothing essentially "uneconomic" in the conduct of a business man who chooses to pay higher prices for raw material purchased from a fraternity brother, or to sell at a special discount to members of his church, or who refrains from embarking on a promising expansion of his business because he prefers an easier life.

There are economic theorists who would include considerations of this sort among the data for the marginal calculus of the firm. The satisfaction from favoring his friends through higher purchase prices or lower selling prices is a special reward or "revenue" to the business man; he may ask himself how much it is worth to him, and we may conceivably add it to his revenue curve. To give up an easier life, expend greater efforts and increase his worries are among the business man's "costs" when he considers an expansion of his business; we may conceivably add it to his "cost" curve. Any number and type of non-pecuniary sacrifices and rewards could thus be included, at some sort of "money equivalent," among the costs and revenues that make up the profits of the firm: the marginal calculus of the firm would become all-inclusive.

It seems to be methodologically sounder if we do not reduce the non-pecuniary satisfactions and dissatisfactions (utilities and disutilities) of the business man to money terms and do not try to make them part of the profit maximization scheme of the firm. If *whatever* a business man does is explained by the principle of profit maximization—because he does what he likes to do, and he likes to do what maximizes the sum of his pecuniary and non-pecuniary profits—the analysis acquires the character of a system of definitions and tautologies, and loses much of its value as an explanation of reality. It is preferable to separate the non-pecuniary factors of business conduct from those which are regular items in the formation of money profits.

This methodological controversy is not too important. Not much depends on whether non-pecuniary considerations of the business man are translated into money terms or, instead, treated as exceptions and qualifications in the explanation of typical business conduct. The pur-

pose of the analysis of the firm is not to explain all actions of each and every firm in existence; we are satisfied if we can explain certain strong tendencies in a representative sector of business. The chief aim of the analysis, moreover, is to show the probable effects of certain changes; if the direction in which output or price is likely to move as a result of a certain change in "data" is not affected by the existence and strength of non-pecuniary factors in business conduct, their inclusion in or exclusion from the marginal analysis of the firm is not a crucial matter.

As a matter of fact, the nature, strength and effects of non-pecuniary considerations in business behavior are problems that need to be investigated. One may presume that producing larger production volumes, paying higher wage rates, or charging lower product prices than would be compatible with a maximum of money profits may involve for the business man a gain in social prestige or a certain measure of inner satisfaction.[10] It is not impossible that considerations of this sort substantially weaken the forces believed to be at work on the basis of a strictly pecuniary marginal calculus.

During the war we were able to observe that patriotism was a strong force in the production policy of American business. There can be no doubt that many firms produced far beyond the point of highest money profits. To be sure, they made large profits, but in many instances they could have made still more money without the last, particularly expensive, portions of output. Their conduct was not defined by the principle of maximization of money profits.[11]

Another of the possibly important qualifications in the analysis of the firm refers to the conflict of interests between the hired managers and the owners of the business. The interest of the former in inordinately large outlays or investments may be capable of description in terms of a

[10] A gain in social prestige may sometimes increase the good will of a firm on which it expects to cash in later. If such a gain is an aim of the firm's policy, it should be treated as a part of its pecuniary considerations. For example, a firm may grant extraordinarily high wage rates as a part of its selling and advertising expense; that is to say, it may hope that its "generous labor policy" will make its products more popular. A portion of current labor cost of the firm would then properly be allocated to future rather than current output.

[11] Observance of laws and regulations presents a special problem for the analysis of business conduct. It will depend on business morals whether prohibited, unlawful alternatives may be regarded as definitely excluded and therefore non-existent; or whether they may be considered as possibilities subject only to certain peculiar risks. Assume, for example, that a price ceiling is fixed for the sale of a product, and fines are provided for violations. To the business man who is unconditionally law-abiding the ceiling price is the only possible price, regardless of how insistently some of his customers may tempt him with higher bids. To the business man, however, who abides by the law only because of the risk of being found out and fined, "demand prices" above the ceiling are real possibilities and the risks of penalties are additions to cost or deductions from revenue. If the sanctions for violations include jail sentences, the risk becomes largely non-pecuniary and it is up to the potential violator, or to the theorizing economist, whether or not that risk will be "converted" into money terms. Black-market prices are in part the result of such risk conversions.

pecuniary calculus, but it is not maximization of the firm's profits which serves here as the standard of conduct. Maximization of salaries and bonuses of professional managers may constitute a standard of business conduct different from that implied in the customary marginal analysis of the firm. The extent to which the two standards would result in sharply different action under otherwise similar conditions is another open question in need of investigation. At this juncture we know only that a qualification must be made. How much it may modify the results of marginal analysis of the single firm we do not know.

B. *Marginal Productivity and Cost of Input*

The Firm, the Industry, the Economy

Marginal productivity has different meanings in the equilibrium theories of the single firm, the industry, and the whole economy. In the theories of demand for particular "factors of production" (productive services) by the industry or economy as a whole marginal productivity analysis is of another methodological character than in the theory of factor employment by the individual firm: the level of abstraction and the frame of reference are different.

In this article we are concerned only with the analysis of the single firm. Like marginal product cost and marginal revenue in the theory of the firm's output, marginal factor cost and marginal productivity are the variables in the theory of the firm's input.

Determination of Input and Output

In a sense, the determination of input on the basis of factor cost and factor product is merely the reverse side of the determination of output on the basis of product cost and revenue. In the former, the cost of and revenue from employing additional factors are balanced; in the latter, the cost of and revenue from producing additional product are balanced. Before we draw curves for the cost of production of a good, we must assume that the supply curves of the factors of production are known, because the buying prices of factors are among the things that make up production cost. Before we draw curves for the revenue productivity of a factor we must assume that the demand curves for the products made with the help of this factor are known, because the selling prices of products are among the things that make up factor productivity. Hence, in each pair of curves one of the curves comprises the data shown in one curve of the other pair.

The interrelationship between the four curves (or functions) can be shown schematically as follows:

$$
\begin{tikzcd}
 & \text{Determination of input} & \\
\text{Supply of factor} \arrow[ur] \arrow[d] & & \text{Productivity of factor} \arrow[ul] \\
\text{Cost of product} \arrow[dr] & & \text{Demand for product} \arrow[u] \arrow[dl] \\
 & \text{Determination of output} &
\end{tikzcd}
$$

A fifth set of data, the production function, showing the technological transformation of factors into products, is implied in both pairs of curves: in the analysis of output it is among the data determining the cost of production; in the analysis of input it is among the data determining the productivity of the factor.[12]

These remarks should make it clear that neither of the two analyses is prior to the other. They are of strictly equal rank, merely two ways of looking at the same thing, namely, the conduct of a single firm maximizing its profits. The only difference is that the significant magnitudes of the analysis are, on the one side, units of factors (such as labor hours) and, on the other side, units of product.

Marginal Net Revenue Productivity

When we speak in the analysis of the firm of "marginal productivity" of a factor, this is an abbreviation for longer but synonymous expressions such as "marginal value productivity" or "marginal net revenue productivity."

The following steps are pedagogically expedient in explaining the concept of marginal net revenue productivity:

(1) Determine by how much a given physical volume of production, X, is increased if the employment of a particular factor is increased slightly (*e.g.*, by one unit), and call the output increase the factor's "marginal physical product," *MPP*.

(2) Determine the selling price, P, at which *MPP* can be sold.

(3) Multiply *MPP* by P in order to obtain the "value of the marginal physical product," *VMPP*.

(4) Determine whether X, because of the sale of *MPP*, has to be sold at a price lower than it would sell if *MPP* were not sold; if so, multiply this price reduction, ΔP, by X, and obtain the "revenue loss on sales because of price cut," $X\,\Delta P$.

[12] This shows that the customary analysis lacks elegance. Production cost and factor productivity are "derived" rather than "original" data. One could do more elegantly with only three sets of data: (a) the possibilities of buying productive services (the factor supply function), (b) the possibilities of transforming them into products (the production function), and (c) the possibilities of selling the products (the product demand function).

(5) Deduct $X \Delta P$ from *VMPP* in order to obtain the "marginal gross revenue product," *MGRP*.
(6) Determine whether the production of *MPP* was connected with increased or decreased outlays for any other complementary or substitutable means of production (materials, fuel, lubricants, labor of any sort, capital funds, wear and tear of equipment, etc.), exclusive of the factor in question, and call them (positive or negative) "incidental expenses," ΔC.
(7) Deduct ΔC from *MGRP* in order to obtain the "marginal net revenue product," *MNRP*.

The use of the word "revenue" as an adjectival modifier is preferred by many writers in order to stress (a) the distinction between physical product and money product, and (b) the fact that marginal revenue is less than selling price if it takes a price cut to dispose of additional output. The use of the word "net" is preferred in order to stress the fact that additional output will rarely be produced efficiently by increasing the employment of one particular factor while leaving all other outlays unchanged; as a rule, some other adjustments will be appropriate. That "marginal productivity" refers regularly to a net revenue product has been clear to economic theorists for over fifty years.[13]

Technology, Market and Supply Conditions

The marginal net revenue product of a factor, at some level of employment, becomes zero or negative. This may be due to technological difficulties—shown in step (1) of the above scheme—or to difficulties in marketing—shown in step (4)—or to difficulties with other supplies and expenses—shown in step (6).

On the other hand, it is possible that both the marginal physical product and the marginal gross revenue product are zero and, nevertheless, the marginal net revenue product is positive. This will be the case if additional units of factor are used only to secure "incidental reductions in expenses" for other means of production (*i.e.*, substitution) rather than an increased production volume. For example, an additional unskilled laborer may be employed as another watchman to reduce the "use" of certain materials which are in heavy demand outside of the plant. Or he may be employed to dust or cleanse certain valuable equipment and thus reduce outlays for repairs or replacements. Substitution

[13] *E.g.*, "the net product . . . is the net increase in the money value of . . . total output after allowing for incidental expenses." (Alfred Marshall, *Principles of Economics*, 8th Edition, p. 521.) For a more detailed discussion of the concept, see my essay, "On the Meaning of the Marginal Product," *Explorations in Economics*, Contributed in Honor of F. W. Taussig (New York and London, 1936), pp. 250–63.

of this sort is nearly always possible[14] and will usually make for positive marginal net revenue productivities even where marginal gross revenue productivities are negative because of limitations in the demand for the product.

Marginal productivity reflects all sorts of technological possibilities. An increased amount of the factor may be used (a) for reducing other expenses without increasing total output (substitution in the narrow sense), (b) for increasing total output with no or few adjustments in the use of other factors (substitution in a wider sense), and (c) for increasing total output with corresponding increases in the use of other factors (inclusive of long-run adjustments, possibly without any substitution). In the last case the incidental expenses will certainly absorb the major portion of the marginal gross revenue product.

Marginal productivity reflects also all possible situations in the demand for the product. If demand is completely inelastic beyond a certain volume, that is, if additional output is not saleable at all, the effect upon marginal productivity is not any worse than if larger outputs can be marketed at severely reduced prices. For whenever the elasticity of demand is less than unity, gross revenue from larger outputs would be lower than from smaller outputs. Hence, the marginal gross revenue product of the factor would become negative. Possibilities of landing additional orders at a price discount but without affecting the rest of the business (that is, possibilities of price discrimination) would show in the fact that no deduction for revenue loss would have to be made from the value of the marginal physical product. Whatever views the firm may have concerning the market for its product are fully reflected in the marginal productivity of the factors employed.

Marginal productivity, finally, reflects all possible conditions of supply of complementary and substitutable factors. Extreme scarcity of a complementary factor may cause a most rapid decline in marginal productivity. Increased supply of a substitutable factor may drastically reduce the whole marginal productivity schedule.

While the conditions of supply of complementary and substitutable factors are among the data determining the marginal productivity of a particular factor of production, the conditions of its own supply are regarded as a separate matter. The "incidental expenses" of increased

[14] The assumption of fixed coefficients of production sometimes affords convenient and permissible simplifications of analysis. But in actual fact, substitution is a practical possibility in almost any production. Beginners sometimes think that substitution of labor for capital must mean the scrapping of machines and shifting of their functions to hand labor. Better care or maintenance work for equipment, postponing the need for replacement, constitutes a clear case of substitution of labor for capital. Increased utilization of plant capacity with increased employment and output also raises the ratio of labor to capital and is another form of substitution.

employment of the factor do not include any of the cost of that factor. The cost of the factor itself is not a part of its marginal net productivity but, instead, is the counterpart with which a balance is sought.

Marginal Factor Cost

Where the supply of the factor is perfectly elastic at a given point, that is, where the firm may be able to employ an additional amount without having to pay for it a higher price per unit, the "marginal factor cost" is equal to the price of the factor (wage rate). If, however, by purchasing or employing more of a factor the firm bids up the price not only of the additional units of the factor but also of the units previously employed, this increase in outlay is a part of the cost of the additional employment. The additionally employed factors would cost the firm not only what they themselves are paid but also the incidental increase in the pay of their fellow factors.

Marginal factor cost, in other words, is the total increase in payment for the particular type of productive service: it consists of (1) the price (wage) paid to the additionally employed, and (2) the price increase (wage increase) paid for the amount of services employed before the addition. In the case of labor, these increases may be due to union action anticipated because of the increased demand for labor, or to the impossibility of discriminating against older employees when new ones can be attracted only at higher rates of pay.

In considering any increase in employment the employer will ask himself whether the additional services will "pay for themselves," that is, what they will cost him and what they will be worth to him. This is all that the economist means when he says that the employer, maximizing his profits, equates marginal factor cost with marginal productivity.

Monopoly, Monopsony, Discontinuities

Neither the existence of monopoly nor of monopsony need invalidate the proposition that the firm will equate marginal productivity and marginal cost of input. For any degree of monopoly is fully reflected in marginal net revenue productivity, and any degree of monopsony is fully reflected in marginal factor cost.[15]

[15] To be sure, there may be a large difference between the price of the factor and the value of its marginal physical product. This difference is due to (a) the reduction in product price that the firm must grant to its customers in order to dispose of an increased output and (b) the increase in factor price that the firm must grant to its suppliers or employees in order to acquire an increased input. These two parts of the spread between the price of the factor and the value of its marginal physical product have been called (a) "monopolistic exploitation" and (b) "monopsonistic exploitation" of the factor. These terms, misleading in several respects, are merely to remind the student of the fact that the spread would not exist if the firm were (a) selling its products under pure competition and (b) buying its factors under pure competition.

Discontinuity of the marginal productivity and marginal factor cost curves, however, may make it impossible for the two magnitudes to be equal. If marginal factor cost at a certain level of employment is below marginal productivity but would be above it at the next higher possible level of employment, the firm will stop short of the latter. Moderate jerks from "marginal cost below revenue" to "marginal cost above revenue" are nothing unusual in arithmetic illustrations; in geometric curves they occur only under special assumptions.

For example, marginal net revenue productivity may precipitously drop at a given employment if the product is sold under certain oligopoly conditions (involving high elasticity of demand in the case of a price increase and low elasticity in the case of a price reduction[16]) and if the factor is not easily substitutable for other factors. The marginal factor cost curve might intersect this marginal productivity curve in its vertical portion. Likewise, marginal factor cost may precipitously rise at a given employment if the factor is bought or hired under certain oligopsony conditions (involving high elasticity of supply in the case of a reduction in the factor price and low elasticity in the case of a raise.[17]) The marginal productivity curve might intersect this marginal factor cost curve in its vertical portion. Under such circumstances the firm would be in equilibrium, with its profits maximized, at a volume of input (employment) at which marginal factor cost is below marginal productivity.

Subjectivity, Range, Concreteness

Almost everything that has been said in earlier sections concerning the meaning of marginal revenue and marginal cost of output holds true, *mutatis mutandis,* in regard of the meaning of marginal productivity and marginal cost of input. More specifically, we should emphasize that

(1) the concepts are to be understood as referring to subjective estimates and conjectures;

(2) the range of imagined variations of the magnitudes in question may be rather narrow;

(3) the time-range of the relevant anticipations will depend on the cirumstances of each case and will rarely be confined to the short run;

(4) the estimates need not be reduced to definite numerical values;

(5) non-pecuniary considerations may effectively compete with those pertaining to the maximization of money profits.

It is probably unnecessary to expatiate again on these points in connection with marginal productivity analysis. Only on the subject of

[16] Under such oligopoly conditions the firm will maximize profits at a volume of output at which marginal revenue is above marginal cost.

[17] Oligopsony in the labor market is probably not as frequent as oligopoly in the product marker.

numerical definiteness does further discussion seem advisable, especially in view of what was said above about the concept of marginal net revenue productivity. The process by which this magnitude may be derived, involving seven separate "steps" and at least as many variables, is rather formidable. If this analytical pattern were taken as a realistic description in photographic likeness of the actual reasoning of the typical employer, the employer would have to be endowed with talents which only few possess in reality.

An analogy may explain the apparent contradiction.

The "Extreme Difficulty of Calculating"

What sort of considerations are behind the routine decision of the driver of an automobile to overtake a truck proceeding ahead of him at slower speed? What factors influence his decision? Assume that he is faced with the alternative of either slowing down and staying behind the truck or of passing it before a car which is approaching from the opposite direction will have reached the spot. As an experienced driver he somehow takes into account (a) the speed at which the truck is going, (b) the remaining distance between himself and the truck, (c) the speed at which he is proceeding, (d) the possible acceleration of his speed, (e) the distance between him and the car approaching from the opposite direction, (f) the speed at which that car is approaching; and probably also the condition of the road (concrete or dirt, wet or dry, straight or winding, level or uphill), the degree of visibility (light or dark, clear or foggy), the condition of the tires and brakes of his car, and—let us hope—his own condition (fresh or tired, sober or alcoholized) permitting him to judge the enumerated factors.

Clearly, the driver of the automobile will not "measure" the variables; he will not "calculate" the time needed for the vehicles to cover the estimated distances at the estimated rates of speed; and, of course, none of the "estimates" will be expressed in numerical values. Even so, without measurements, numerical estimates or calculations, he will in a routine way do the indicated "sizing-up" of the total situation. He will not break it down into its elements. Yet a "theory of overtaking" would have to include all these elements (and perhaps others besides) and would have to state how changes in any of the factors were likely to affect the decisions or actions of the driver.[18] The "extreme difficulty of calculating,"[19] the fact that "it would be utterly impractical"[20] to attempt to work out and ascertain the exact magnitudes of the

[18] Very cautious drivers are apt to work with so wide safety margins that small changes in the "variables" may not affect the actions. Timid souls may refuse to pass at all when another car is in sight.

[19] Lester, *Am. Econ. Rev.*, Vol. XXXVI, No. 1, p. 72.

[20] Lester, *ibid.*, p. 75.

variables which the theorist alleges to be significant, show merely that the *explanation* of an action must often include steps of reasoning which the acting individual himself does not *consciously* perform (because the action has become routine) and which perhaps he would never be *able* to perform in scientific exactness (because such exactness is not necessary in everyday life). To call, on these grounds, the theory "invalid," "unrealistic" or "inapplicable" is to reveal failure to understand the basic methodological constitution of most social sciences.

Imagine an empirical researcher attempting to test by a naïve questionnaire method the "theory of overtaking," questioning hundreds of drivers about their ability to estimate distances and speed, and to calculate the relevant time intervals and the degrees in which a small change in any one of the variables affected the result. Would he not obtain the most hopeless assortment of answers? Would not these answers support the conclusion that the assumptions of the theorists had been wrong and that one must look for other explanations? Yet I can hardly believe that any sensible person would deny the relevance of the enumerated variables and would contend, for example, that speed and distance of the approaching automobile could not have been taken into account by the driver passing the truck, because he was not good in mathematics.[21]

The Analysis of Change Needs No Exactness

The business man who equates marginal net revenue productivity and marginal factor cost when he decides how many to employ need not engage in higher mathematics, geometry, or clairvoyance. Ordinarily he would not even consult with his accountant or efficiency expert in order to arrive at his decision; he would not make any tests or formal calculations; he would simply rely on his sense or his "feel" of the situation. There is nothing very exact about this sort of estimate. On the basis of hundreds of previous experiences of a similar nature the business man would "just know," in a vague and rough way, whether or not it would pay him to hire more men.

The subjectivity of his judgments is obvious. Just as different drivers may reach different conclusions about the advisability of passing another car under given "objective" conditions, different business men will have different "hunches" in a given situation. The subordinates or partners of the man who makes a decision may sharply disagree with him; they may see the situation quite differently. They may be more optimistic about the possibilities of obtaining more orders with only

[21] Driving at night, when he has nothing to go by except the size and brilliance of the headlights of the approaching cars, the experienced driver becomes conscious of the fact that in daytime he has better ways of sizing up their speed and distance. With reduced visibility he will "calculate" with greater safety margins.

slight price concessions or through increased sales efforts (which would raise both the marginal revenue and marginal productivity curves drawn by the theorist to characterize their considerations). Or they may be more certain about the technical possibility of achieving a larger output by certain production methods (which would lower the marginal cost curve, and could raise or lower the marginal productivity curves). Some decision, usually a routine decision without debate, is made, or at least some action is taken; and the decision or action is necessarily affected by the business man's conjectures concerning sales possibilities and production possibilities.

The way in which changes in the essential variables will affect the probable decisions and actions of the business man is not much different if the curves which the theorist draws to depict their conjectures are a little higher or lower, steeper or flatter. These curves are helpful to the student of economics in figuring out the probable effects of change — in learning in what direction output, prices and employment are likely to be altered, and under what circumstances increases or decreases are likely to be drastic or negligible. Better markets or higher costs are likely to affect business men of different vision or daring in rather similar ways; and any differences can be conveniently "typed" in terms of shapes, positions and shifts of the curves into which the theorist condenses the business men's conjectures.

Equipped with this understanding of the meaning and purposes of marginal analysis, we may proceed to a discussion of the findings of empirical research which purportedly failed to verify it — or by which it was deemed to be contradicted and disproved.

II. Empirical Research on the Single Firm

There is not as yet available any large amount of material derived from systematic empirical research on the business conduct of the single firm. But almost everybody interested in these questions has had occasional conversations with business men, and the impressions gained from such inquiries into the business men's experiences often form an empirical basis for the doubts which so-called "realistic" critics entertain of "theoretical" analysis.

I submit that the few systematic and the many casual researchers have often been misled by pitfalls of semantics and terminology and by a naïve acceptance of rationalizations in lieu of genuine explanations of actions.

Economists' Vocabulary and Business Language

The vast majority of business men have never heard of expressions such as elasticity of demand or supply, sloping demand curves, mar-

ginal revenue, marginal cost. If they do not know the words or the concepts, how can they be supposed to think in these terms? A scattered few of the men may have been exposed to such words and ideas in half-forgotten college courses, but they have found in practice they had no use for a vocabulary unknown to their associates, superiors, subordinates, and fellow business men. Thus the most essential terms in which economists explain business conduct do not exist in the business man's vocabulary. Does this not prove that the explanations are unrealistic or definitely false?

Only an inexperienced researcher could draw such a conclusion. The technical terms used in the explanation of an action need not have any part in the thinking of the acting individual. A mental process in everyday life may often be most conveniently described for scientific purposes in a language which is quite foreign to the process itself.

To ask a business man about the "elasticity of demand" for his product is just as helpful as inquiring into the customs of an indigenous Fiji Islander by interviewing him in the King's English. But with a little ingenuity it is possible to translate ideas from the business man's language into that of the economist, and *vice versa*. Questions such as "Do you think you might sell more of this product if you cut the price by 10 per cent?" or "How much business do you think you would lose if you raised your price by 10 per cent?" will evoke intelligent answers in most cases provided the questions are readily reformulated and adapted to the peculiarities of the particular man and his business. Often it will be necessary to know a good deal of the technology, customs and jargon of the trade, and even of the personal idiosyncrasies of the men, before one can ask the right questions. A set formulation of questions will hardly fit any large number of business men in different fields and, hence, questionnaires to be filled out by them will rarely yield useful results.

Rationalizations of Decisions or Actions

Psychologists will readily confirm that statements by interviewed individuals about the motives and reasons for their actions are unreliable or at least incomplete. Even if a person tries to reconstruct for himself in his memory the motives and reasons for one of his past actions, he will usually end up with a rationalization full of afterthoughts that may make his actions appear more plausible to himself. Explanations given to an interviewer or investigator are still more likely to be rationalizations in terms that may make the particular actions appear plausible and justified to the inquirer. In order to be understood (and respected) the interviewed person will often choose for his "explanations" patterns of reasoning which he believes to be recognized as "sound" and "fair" by others. Most of these rationalizations may be subjectively honest and

truthful. It takes an experienced analyst to disentangle actual from imaginary reasons, and to separate relevant from irrelevant data, and essential from decorative bits of the information furnished. Written replies to questionnaires are hopelessly inadequate for such purposes.[22]

Questions of business policy are particularly difficult objects of inquiry because the business man usually is anxious to show by his answers that he is intelligent, well informed, and fair. The standards of fairness and business ethics to which he wishes to conform are often those which he believes are accepted by his lawyers, accountants, customers, competitors, fellow citizens, economists and whatnot. Only through detailed discussions of different situations and decisions, actual as well as hypothetical, will an investigator succeed in bringing out true patterns of conduct of the individual business man.[23]

A. *Average Cost and Price*

One of the conclusions of casual or systematic empirical research on the business firm is that business men do not pursue a policy of maximizing profits, and of pricing according to the marginal cost and marginal revenue principle, but instead follow rules of pricing on the basis of average cost calculations even where this is inconsistent with profit maximization.

We shall attempt to reinterpret the findings of systematic research along these lines. For this purpose we must first clear up some misunderstandings which appear to have contributed to the support for the average-cost theory of pricing.[24]

Averaging Fluctuating Costs and Prices

In discussions with business men I have found that two different types

[22] *Cf.* George Katona, *Price Control and Business* (Bloomington, Ind., 1945), p. 210. He states that "only detailed interviews can probe into the motives behind business decisions."

[23] For further comments on the difficulties of good empirical research on business conduct, see my paper "Evaluation of the Practical Significance of the Theory of Monopolistic Competition," *Am. Econ. Rev.*, Vol. XXIX (1939), p. 233. After discussing the policies of my former business partners I concluded (p. 234): "An investigator who would have based his findings on their answers to questionnaires or even on personal interviews, would have come to erroneous results. An investigator who could have seen all the actually or potentially available statistics would have come to no results at all. The only possibility for a fruitful empirical inquiry into these problems lies, I think, in the more subtle technique of analyzing a series of single business decisions through close personal contact with those responsible for the decisions."

[24] According to modern theory price equals average cost (inclusive of normal profit) chiefly under the pressure of competition. The individual firm will charge a price above or below average cost depending on the situation and in line with the marginal calculus. However, when price has risen above average cost, other firms will expand production and new firms will enter the industry and their competition tends to reduce price to the average cost level. Thus it is not the price policy of the individual firm but the pressure of actual or potential competition which makes prices equal to average cost. In contrast with this, the theory advanced by the critics of marginal analysis asserts that firms set their prices according to average cost regardless of the state of competition and regardless of the market situation.

of averages must be distinguished: averages over time and averages as a function of the volume of output.

Selling prices frequently fluctuate over time, not only cyclically and seasonally but during the week or the day. In calculations for investment, cyclical price fluctuations will be taken into account and average prices will be estimated. In planning the production of seasonally demanded goods—summer dresses, swimming suits, winter sport clothes, Christmas toys—price discounts for off-season sales will be counted into the average selling price. Hotels in resorts may charge preferential rates for guests arriving on Tuesdays and leaving on Thursdays; wholesale grocers will dispose of over-ripe fruit and vegetables at reduced prices; public utilities may charge lower rates to industrial off-peak customers; in all these cases the firms will have to figure out their average revenue or average price.

Costs may show similar fluctuations over time. Raw materials and fuel prices may vary cyclically and seasonally, electric power rates even over different hours of the day. Seasonal changes of the weather may cause cost differences in several technical processes—natural instead of artificial heat for drying when wind, temperature and humidity are favorable; hydroelectric instead of steam-generated power when rivers carry sufficient water; and so on. These and hundreds of other reasons call for calculations of average costs by the affected business firms.

The average revenues and average costs which must be calculated to take care of such variations over time are not in the least inconsistent with the marginal revenue and marginal cost principles. Indeed, if increases in output are under consideration, the marginal changes of revenue and cost as functions of output will have to comprise any changes over time that will affect revenue or cost. That the firm figures with these averages over time does not mean that it makes its decisions concerning price policies on the basis of an average-cost rule rather than the maximum-profit rule.

Actual versus *Potential Average Costs*

The absence of the expressions "marginal cost" and "marginal revenue" from the business man's vocabulary and the fact that he usually explains his price policy in terms of "average cost" account for a good part of the skepticism of the empiricists. Yet, the words used are not indicative of the lines of thinking; the marginal calculus may be followed without pronouncing or knowing any of the terms in question.

In the economist's jargon, the business man who considers taking more business is supposed to say to himself: "At the increased volume of output, marginal cost will be this much and marginal revenue that much." (Statement I.) In a literal translation into everyday language, he would

say, "The increase in production will cost me this much and will bring in that much." (Statement II.) He could say it also in a different version: "The increase in business will raise total costs from this to this much, and total receipts from that to that much." (Statement III.) These statements are absolutely equivalent, all expressing the marginal calculus of variations.

The same thing can also be expressed in a fourth, much more complicated way: "The increase in business will change average cost from this to this much, and average price from that to that much; it will, therefore, change profits by changing the margin of so and so much, times an output of this much, to a margin of so and so much, times an output of that much." (Statement IV.) With all its complications the statement is still equivalent to the former ones. It is a bit foolish to divide total costs and receipts by the output figures just in order to multiply afterwards the differences again by the output figures; but it is not incorrect. The average cost figures as such are, of course, irrelevant in the calculation.[25]

The average cost figures, in spite of their prominent place in our business man's complicated statement, had no place in his actual decision. The decision was based on the profitableness of the added business. When not only the current but also the potential average cost—that is, the average cost at a different production volume—and also the change in total receipts are considered, then the reasoning is true marginal calculus, not average-cost reasoning as some mistakenly believe.

Average-Cost Pricing as the Lawyer's Ideal

Generations of lawyers have accepted and proclaimed the fairness of the average-cost standard of pricing. Decades of regulatory experiments and arguments, and a long history of court decisions, have emphasized the average-cost principle as the just basis of pricing. Is it then surprising that business men try to explain their pricing methods by average-cost considerations?

[25] This can be easily illustrated by assuming any set of figures. Assume that the firm considers taking new orders for 1,000 tons of product, reducing its average price. Statement IV might read: "The increase in business from 10,000 tons to 11,000 tons will raise total cost from \$80,000 to \$86,900 and, hence, will reduce average cost from \$8.00 to \$7.90; it will raise total receipts from \$99,500 to \$107,800 and, hence, will reduce average price from \$9.95 to \$9.80; it will, therefore, raise profits by changing a margin of \$1.95, times an amount of 10,000, *i.e.*, \$19,500, to a margin of \$1.90, times an amount of 11,000, *i.e.*, \$20,900. Let's take the business."

Statement III would read under the same circumstances: "The increase in business will raise total costs from \$80,000 to \$86,900, that is by \$6,900, and will raise total receipts from \$99,500 to \$107,800, that is by \$8,300. Let's take the business."

Statement II on the same situation would read: "The increase in production will cost me \$6,900 and will bring in \$8,300. Let's take the business."

Statement I, finally, would read: "At the increased volume of output, marginal cost will be \$6.90 and marginal revenue \$8.30. Go ahead."

Corporations in regulated industries are sometimes caught in their official price justifications: a change in the market situation may make it wise and profitable to change the selling price, but that price has been anchored to an average-cost calculation which it is now difficult to disavow. The companies cannot very well submit to their regulatory commissions revised average-cost calculations every time market conditions change. They have to put up with relatively inflexible prices which, were it not for the regulatory authorities, might be as much against their own interests as against those of the consumers.

More often, however, the business man is not conscious of the fact that he uses average-cost considerations merely as rationalizations or justifications. Selling with high profit margins might indicate monopoly and "squeezing of the consumer"; selling below cost might indicate unfair competition and "cutting the throat of the competitor." As a good citizen the business man wishes to avoid both these wicked practices. As long as he can justify his prices as covering "average cost plus a fair profit margin" he can say, to others as well as to himself, that he is living up to the accepted standards of law and decency. If this "fair profit margin" is at times a bit generous and at other times rather thin, he can still justify his price. (That such variations betray his "explanation" of this pricing method as incomplete or untenable may escape his attention as well as that of his inquirers.)

Average-Cost Pricing as the Accountant's Ideal

Selling price must cover average cost inclusive of overhead and fair profit margin if the business enterprise is to live and to prosper. A good accountant regards it as his duty to watch over the soundness of the firm's pricing methods and to warn against prices below full cost.

Practical and academic accountants have sometimes attacked the marginal-cost principle as a fallacy conducive to practices that are liable to result in business losses. They have reasoned that a general application of differential cost considerations might mean that firms forget that they ought to recover their overhead in *some* part of their business.

Reasoning of this sort reveals a twofold misunderstanding of the marginal principle. (a) That marginal cost does not "include" fixed overhead charges need not mean that it will always be below average total cost; indeed, marginal cost may equal or exceed average cost. (This will always be true for volumes of output at or beyond "optimum capacity" of the firm.) (b) To use marginal cost as a pricing factor need not mean that price will be set at the marginal cost level. Indeed, this will never be done. In the exceptional case of pure competition, price cannot be "set" at all but is "given" to the firm and beyond its control; and marginal cost will be equal to price not because of any price policy but only because

of adjustments in the firm's production volume. In the normal case of monopolistic competition, the firm will never charge a price as low as marginal cost; it will charge a price at which marginal revenue is equal to marginal cost, and this price must therefore be above both.

It is a stupid misunderstanding to believe that the use of marginal cost in the business man's pricing technique implies an advice that selling price should be set at the marginal cost level. Marginal cost and marginal revenue considerations mean nothing else but what a business man means when he asks himself: "Could I get some more business and would I want it under the conditions under which I could get it"?

The idea, held by some accountants, that pricing on the basis of the marginal principle would sacrifice profits is the opposite of the truth—except in one very special sense: where the average-cost rule has been used as a monopolistic device, resort to the marginal principle might be taken to mean abandonment of a cartel arrangement in the industry and "outbreak" of unrestricted competition.

Average-Cost Pricing as a Cartel Device

In times of depression business men often discover that it is wiser to lose only a part rather than all of their overhead cost; that it is better to sell at prices below full cost than to stick to prices which would cover all costs but at which they cannot sell. They usually deplore these deviations from the full-cost principle of pricing and argue that nobody would *have* to sell below cost if nobody *did* sell below cost.

Price fixing among producers or official price codes may in such situations succeed in the maintenance of a monopolistic level of price in spite of strong temptations for competitive price cutting. Tacit understandings about the observation of average-cost rules of pricing sometimes constitute an alternative way of achieving price maintenance in a declining market. Moral suasion in the direction of "good accounting" and of "sound pricing" on the basis of "full cost" may be an effective device of domestic price cartels (through trade associations or in the form of tacit understandings).

Outright price fixing, just as any other cartel agreement, is a device to affect the estimates of demand conditions for the products of the individual firms. Only if demand as seen by the individual seller is effectively changed through his anticipations of serious reactions on the part of his competitors and fellow cartel members will he find it advantageous to restrict his output to the extent necessary for the maintenance of the agreed price. The essential effect of the agreement is upon the elasticity of the expected demand. As a rule, elasticity becomes absolutely zero (that is, the demand curve breaks off abruptly) at the largest volume of output which the individual cartel member thinks he can sell at the

fixed price. If he considers price cutting in contravention of the agreement as a practical alternative, the demand curve will not break off but continue downward with reduced elasticity—reduced because of the risk of penalizing or retaliatory actions.

The general adoption of an average cost rule is in effect a price agreement among the members of the particular industry. Where a trade association announces a representative "average cost," the announced value need not tally at all with the average cost of an individual firm. Where cost conditions are believed to be very similar throughout the industry, the understanding may be informal and tacit. It may be made entirely a matter of "business ethics" not to sell below average cost plus fair profit margin. For the firm which strictly observes this ethical code the demand curve breaks off abruptly at the output it can sell at that price. The average cost calculation of that firm takes the place of the fixed cartel price and is the essential determinant of its demand and marginal revenue considerations.

If a business man believes that the best policy for him in the long run is to stick to the cartel, this does not mean that he disregards the marginal principle. On the contrary, the feared consequences of breaking away from the cartel, its probable effects upon long-run demand and revenue, dictate his continued adherence. Likewise, if violations of the ethical code of average-cost pricing are feared to have adverse consequences, continued membership in this "ethical cartel" is not a departure from the marginal principle. The average-cost rule and the sanctions for violating it have the same sort of effects upon demand elasticity and marginal revenue which other types of price agreements have been shown to have.

Average Cost as a Clue to Demand Elasticity

Even without any ethical or unethical code prescribing an average-cost rule of pricing, average cost may be the most important datum for the estimate of demand elasticity. The elasticity of demand for any particular product is determined by the availability of substitutes. In order to estimate how much business a firm may lose if it raises its price, it will consider whether existing or potential competitors can supply competing products at the particular price. The elasticity of supply from competing sources determines the elasticity of demand for the firm's product. The supply from competing sources will depend on their actual or potential cost of production. And usually the best clue that a firm has to the production cost of competitors is its own production cost, corrected for any known differences of conditions.

Assuming that competitors have the same access to production factors, materials and technology, their production cost can not be much

different from that of a particular producer who may just be weighing the chances of a price increase. In the absence of any cartel arrangements he will have to count on his competitors to expand their business at his expense if he ventures to raise his selling price above average cost. Where he need not fear the capacity of existing competitors, but entry into the industry is relatively easy, he will have to reckon with newcomers' competition if he makes the business too attractive by allowing himself too generous a profit margin above average cost. Under such circumstances he will know that he stands to lose too much business and had better stick fairly closely to a price based on average cost.

Notwithstanding any rationalizations of this price policy, the reasons for it lie in the competitiveness of the industry resulting in a high elasticity of demand visualized by individual sellers.[26] To "explain" this price by reference to some emotional attachment to the average cost principle is to miss the mark. The rôle of average cost in the firm's pricing process in this case is to aid in gauging the elasticity of the long-run demand for its product.

Reasons and Variables

Seeing how many different rôles average cost may play in the pricing process without in the least contradicting the statement that marginal cost and marginal revenue determine output and price, one should realize the dangers of attempts to use utterances of business men as evidence against the correctness of marginal analysis.

Business men's answers to direct questions about the reasons for charging the prices they are charging are almost certainly worthless. Every single fact or act has probably hundreds of "reasons"; the selection of a few of them for presentation to the inquirer is influenced by the prejudices or old theories which the informant had impressed upon him by school, radio, newspapers, etc.

Except in the case of a genuine decision leading to a recent change of policy, one may say that an approach much more fruitful than that of asking about reasons *for* some policy is to ask about reasons *against* its alternatives. Instead of asking for explanations of the price actually charged or the output volume actually produced, questions about "why not more" and "why not less" are likely to yield more revealing results. But even these answers must be checked and double-checked through a network of cross-examination, segregating and isolating certain variables in a manner familiar to the scientist working with the calculus of variations and with the determination of partial derivatives.

[26] Where the average-cost rule is a cartel device, the elasticity of demand will be small or zero from the actually realized point on *downward*. When average cost is a clue to size up potential competition, the elasticity of demand will be high from the actually realized point on *upward*. The former prevents price reductions, the latter price increases.

Research on Actual Pricing Methods

On the basis of marginal analysis of the firm and the industry, we should expect for most industries that price in the long run would not deviate too much from average cost, yet that the firm would attempt to get better prices when it could safely get them and would not refrain from cutting prices when it believed that this would increase its profits or reduce its losses.

Now let us compare with this the findings of one of the empirical research undertakings which shook the researchers' confidence in the marginal principle and convinced them that business men followed the "full-cost principle" of pricing regardless of profit maximization. Inquiry was made through interview of 38 entrepreneurs.[27] "A large majority" of them explained that they charged the "full cost" price. Some, however, admitted "that they might charge more in periods of exceptionally high demand"; and a greater number reported "that they might charge less in periods of exceptionally depressed demand."[28] Competition seemed to induce "firms to modify the margin for profits which could be added to direct costs and overheads."[29] Moreover, "the conventional addition for profit varies from firm to firm and even within firms for different products."[30]

This is precisely what one should have expected to hear. Do these findings support the theory of the average-cost principle of pricing? I submit that they give little or no support to it. The margins above average cost are different from firm to firm and, within firms, from period to period and from product to product. These differences and variations strongly suggest that the firms consult other data besides or instead of their average costs. And, as a matter of fact, the reported findings include some that indicate what other considerations were pertinent to the price determinations by the questioned business men.

Of 24 firms which gave reasons for not charging higher prices, 17 were tabulated as admitting that it was "fear of competitors or potential competitors" and a "belief that others would not follow an increase." Another two stated that "they prefer a large turnover."[31] To me the 19 answers indicate that these business men were estimating the risk of losing business if they raised prices or, in other words, that they were concerned about the elasticity of demand.

Of 35 firms which gave reasons for not charging lower prices, 4 firms explained that they were members of price-fixing combinations; 2 stated

[27] R. L. Hall and C. J. Hitch, *op. cit.*, p. 12.

[28] *Ibid.*, p. 19.

[29] *Loc. cit.*

[30] R. L. Hall and C. J. Hitch, *op. cit.*, p. 20.

[31] *Ibid.*, p. 21.

that it was "difficult to raise prices once lowered"; and 21 referred directly or implicitly to their estimates of demand elasticity. (Nine firms: "Demand unresponsive to price"; one firm: "Price cuts not passed on by retailers"; eleven firms: "Competitors would follow cuts.") Only 8 firms gave reasons other than monopolistic price fixing or monopolistic elasticity considerations; these 8 were listed as having "quasi-moral objections to selling below cost."[32] Unfortunately the interviewers did not find out what these conscientious objectors to price cutting thought about the responsiveness of demand; and whether they would remain adamant if they were sure that a small price concession would produce a large increase in sales. I suspect that a cross-examination would have brought out the fact that the moral or quasi-moral views on price maintenance were regularly coupled with a very strong opinion that a price reduction would not produce sufficiently more business and, thus, would constitute useless sacrifice of profits.

In any event, there is little or nothing in the findings of this inquiry that would indicate that the business men observed an average-cost rule of pricing when such observance was inconsistent with the maximum-profit principle. On the other hand, there is plenty of evidence in the findings that the business men paid much attention to demand elasticities — which to the economist is equivalent to marginal revenue considerations.

The Absence of Numerically Expressed Estimates

Why should others in the face of this evidence have come to the conclusion that the marginal principle was not applied and profit maximization not attempted by the group of business men studied? How could others have failed to be impressed by the facts just recited?

It seems that their confidence in the conventional analysis was lost when they found to their surprise that the business man had no definite numerical estimates of the magnitudes relevant to the application of the marginal principle. They had assumed that a business man should "know" the elasticity of demand for his product, and now they were shocked to find "that the great majority of entrepreneurs were in profound ignorance with regard to its value."[33] A student who had expected to find exact estimates must indeed have been disappointed when most of his informants "were vague about anything so precise as elasticity."[34]

The inquirers found the same vagueness with regard to marginal cost estimates. While the entrepreneurs usually computed direct cost and

[32] *Loc. cit.*

[33] R. F. Harrod, *op. cit.*, p. 4. Concerning this discovery Mr. Harrod remarks emphatically: "This, indeed, must be regarded as one notable result of our inquiry."

[34] R. L. Hall and C. J. Hitch, *op. cit.*, p. 18.

total overheads "with some pains at accuracy,"[35] they could not furnish any data on marginal cost. He who expected that marginal cost and marginal revenue were equated on the basis of precise calculations must feel stultified. The student who had to do homework computing marginal cost and revenue figures to the second or third decimal point may feel befooled when he learns that the business man does not do anything of the sort. But to conclude from the absence of definite numerical estimates that the magnitudes in question were irrelevant in the conduct of the firms is a *non sequitur*. On the basis of the previous discussion of this subject (see above pp. 534 *ff.*) we should understand that the construction of a pattern for the analytical description of a process is not the same thing as the actual process in everyday life; and we should not expect to find in everyday life the definite numerical estimates that are part of the scientific pattern.

Apart from the absence of numerical estimates of marginal revenue and marginal cost it is difficult to see what other findings of the inquiry could have persuaded the researchers that they had disproved the theory of marginalism in the conduct of the firm. There is not a single proposition in the tabulated results of the inquiry that can not be fully harmonized with marginal analysis. The "Analysis of Replies to Questionnaire on Costs and Prices," which the researchers presented as an appendix to their report,[36] contains a wealth of illustrative material—illustrative, as I see it, of the application of the marginal principle to business decisions of the single firm.

B. *Marginal Productivity and Wage*

Empirical research designed to verify or disprove marginal productivity theory in the analysis of input of the individual firm is beset with difficulties. Few systematic endeavors have been made and none has led to any suggestion, however vague or tentative, of an alternative theory. Whereas in certain price research projects those who felt compelled to reject the marginal theory have advanced the average-cost theory of pricing as a substitute, no substitute theory has been forthcoming from those who decried marginal productivity theory.

Statistical Research

Empirical research on cost, price and output of the individual firm has resulted in several interesting attempts to derive marginal cost functions from statistical data; and also in one or two attempts to derive price elasticities of demand for a firm's products. But nobody, to my knowledge, has ever undertaken to construct from actual data a

[35] R. F. Harrod, *op. cit.*, p. 4.

[36] R. L. Hall and C. J. Hitch, *op. cit.*, pp. 33–45.

marginal net revenue productivity curve for a given type of labor employed by a firm. The difficulties are formidable and, since the raw material for the calculations could not come from any records or documents but merely from respondent's guesses of a purely hypothetical nature, the results might not be much more "authentic" than the schedules made up by textbook writers for arithmetical illustrations.

Statistical studies of the relationship between wage rates and employment in large samples of individual firms or industries would be nearly useless because we have no way of eliminating the simultaneous effects of several other significant variables, especially those of a psychological nature. An increase in wage rates may have very different effects depending on whether the employer (1) (a) has foreseen it, (b) is surprised by it; (2) (a) reacts quickly to it, (b) reacts slowly to it; (3) (a) expects it to be reversed soon, (b) expects it to be maintained, (c) expects it to be followed by further increases; (4) (a) assumes it to be confined to his firm, (b) assumes it to affect also his competitors, (c) believes it to be part of a nation-wide trend; (5) connects it with an inflationary development; or is influenced by any other sort and number of anticipations. Most of these moods and anticipations can be translated by the economist into certain shapes or shifts of the marginal productivity functions of the firms; but since the researchers cannot ascertain or evaluate these conjectural "data" for the large number of firms contained in a representative sample, statistical investigations of the wage-employment relation of individual firms are not likely to yield useful results.

Questionnaire on Employment

It has been pointed out above (p. 538) why the method of mailed questionnaires without supporting interviews is hopelessly inadequate for empirical studies of business conduct. Even the most intelligently devised set of questions would not assure reliable and significant answers. Questions designed to achieve the necessary separation of variables would be so complicated and call for so high a degree of "abstract thinking" on the part of the questioned business men that questionnaires of this sort would be too much of an imposition, and coöperation would be too small. Although the questions in Professor Lester's research project on employment did not even approach these standards, he received only 56 usable replies from 430 manufacturers whom he had asked to fill out his questionnaires.[37]

Professor Lester's questionnaires suffered not merely from the inherent weaknesses of the method but also from defects in formulation. These defects were so serious that even the most complete, reliable and intelligent

[37] R. A. Lester, *Am. Econ. Rev.*, Vol. XXXVI, No. 1, pp. 64–65.

answers could not have yielded significant findings. The business men were asked to rate the "importance" of several factors determining the volume of employment in their firms. No explanation was given whether this importance of a variable—that is, I presume, its responsibility for changes in the employment volume—should refer to (a) the frequency of its variations, (b) the extent of its variations, or (c) the effects of its variations. Surely, the variable rated as least important—perhaps because it varied less frequently than the others—may be just as strategic as any of those with higher importance ratings. What we really need to know, however, is not the *comparative* importance of several factors but rather the effects of variations of each factor separately while the others remain unchanged.

If I want to know by how much an increase in the price of spinach may affect its consumption in an individual household, I shall not get very far by asking the householders to give a percentage rating to each of several listed factors that are believed to be "important" influences on spinach consumption. If it were tried, we should not be surprised to find changes in family income, the number of children and guests at dinner, and the notoriety of Popeye the Sailor's gusto for spinach, receiving much higher percentage ratings than changes in the price of spinach. (In a number of households price may not be a factor at all.) Nobody, I hope, would conclude from such a poll that price is an unimportant factor in the consumption of spinach.

Yet Professor Lester followed just this procedure when he wanted to find out how important wage rates were in determining the volume of employment in the individual firm. He asked the executives of the companies to "rate" the following factors "in terms of the percentage of importance of each":

a. Present and prospective market demand (sales for your products, including seasonal fluctuations in demand).
b. The level of wage rates or changes in the level of wages.
c. The level of material costs and other non-wage costs and changes in the level of such non-labor costs.
d. Variations in profits or losses of the firm.
e. New techniques, equipment, and production methods.
f. Other factors (please specify).

Of these items the first unquestionably excels all others in frequency and extent of variations. That it won first prize in Professor Lester's importance contest is therefore not surprising. If several respondents gave ratings to item d (variations in profits or losses) and at the same time also to other items, they obviously did not realize that this variable comprised all the others. Professor Lester does not explain why he listed it when he knew that it was not "completely independent" and

that "for example, wages affect profits."[38] Nor does he state whether the 43 firms which failed to mention changes in wage rates as an important factor meant that they would continue in business and continue to employ the same number of workers regardless of any degree of wage increase. If this is what they meant, they can hardly be taken seriously. If they meant something else, then it is not clear just what the replies should indicate about the probable effects of wage increases upon employment.

The strangest thing about Professor Lester's list of possibly important variables is that all—except f, the unspecified, and d, the all-inclusive profit-and-loss item—are essential variables of the very analysis which he means to disprove. The prize-winning item, a, the demand for the product, is certainly a most crucial determinant of marginal productivity. (See above pp. 529 and 531.) Items c, non-labor cost, and e, production techniques, are two other determinants of marginal productivity. How Professor Lester came to think that the results of this poll would in any sense disprove or shake marginal productivity analysis remains a mystery.

Questionnaire on Variable Cost

Professor Lester asked his business men also some questions on unit variable costs and profits at various rates of output. The information obtained in answer to these questions might have been useful had it not been based on an undefined concept of "plant capacity." Unfortunately, it must be suspected that not all firms meant the same thing when they referred to "100 per cent of capacity."

Economic theorists use different definitions of capacity. One widely-used definition marks as 100 per cent of capacity that volume of output at which short-run total cost per unit is a minimum; another definition fixes the 100 per cent mark at the output at which variable cost per unit is a minimum. The former definition implies decreasing average total cost, the latter decreasing average variable cost, up to "100 per cent capacity." Professor Lester after painstaking empirical research arrives at the following finding:

> The significant conclusion from the data in this section is that most of the manufacturing firms in the industries covered by this survey apparently have decreasing unit variable costs within the range of 70 to 100 per cent of capacity production. . . .[39]

Has Professor Lester asked himself whether this is not merely a self-evident conclusion implied in the definition of capacity used by his respondents?

[38] *Ibid.*, p. 66.
[39] *Ibid.*, p. 71.

The steepness of the reported decline in unit variable cost, however, would be an interesting observation—if the data were reliable. (Few of Professor Lester's firms had "constant unit variable costs," or anything approaching this situation, over a considerable range of output.[40]) It is rather peculiar that unit variable costs should decrease steeply (at an increasing rate!) down to a certain point and then abruptly start rising —as one must infer from the term "100 per cent capacity." Where equipment is not utilized for 24 hours a day, the steep decline and abrupt rise of the unit cost is somewhat questionable.

Professor Lester, nevertheless, has sufficient confidence in his findings to draw conclusions—conclusions, moreover, which could not even be supported if the findings were of unquestionable validity. He states:

> If company output and employment policies are based on the assumption of decreasing marginal variable cost up to full capacity operations, much of the economic reasoning on company employment adjustments to increases and decreases in wage rates is invalid, and a new theory of wage-employment relationships for the individual firm must be developed.[41]

This deduction simply does not follow from the premises. There is no reason why decreasing marginal costs should invalidate the conventional propositions on factor cost and input. Professor Lester could have found dozens of textbook examples demonstrating the firm's reactions under conditions of decreasing marginal cost.

Professor Lester may have been deluded by a rather common confusion between related concepts: from decreasing marginal cost he may have jumped to the assumption of increasing labor returns,[42] and from increasing physical returns he may have jumped to the assumption of increasing marginal productivity of labor. Both these jumps are serious mistakes. For instance, the very conditions which may cause a firm to restrict the employment of labor to a volume still within the phase of increasing physical productivity per unit of labor are likely to result in decreasing marginal net revenue productivity of labor. These conditions are:

(a) an indivisibility of the firm's physical plant facilities,[43] combined with either (or both),

(b) a low elasticity of the demand for the firm's products[44] or (and)

[40] *Ibid.*, p. 70.

[41] *Ibid.*, p. 71.

[42] *Ibid.*, p. 68.

[43] *I.e.*, the firm cannot adjust the number of machines or production units to smaller production volumes but must instead produce small outputs with an inefficiently large productive apparatus.

[44] *I.e.*, the firm realizes that it can charge much higher prices for smaller outputs or cannot dispose of larger outputs except with substantial price reductions.

(c) a low elasticity of the supply of labor to the firm.[45]

The first condition, (a), makes a phase of increasing physical productivity of labor in the firm a practical possibility; the other conditions, (b) or (c), make that phase relevant for actual operations by providing the pecuniary incentive to operate the plant inefficiently. Condition (b), the low elasticity of demand for the product, will cause marginal net revenue productivity of labor to be diminishing in a range of employment in which average or even marginal physical productivity of labor are still increasing.

It is not possible from Professor Lester's exposition to find out whether his failure to see these relationships was at the bottom of his faulty theorizing on this point. In any event, his findings on variable costs contain nothing that would even vaguely bear on the validity of marginal analysis.

Questionnaire on Adjustments

Professor Lester's fact-finding and theorizing on substitution between labor and capital and on other adjustments of the firm to changes in wage rates are also marred by inconsistencies and misunderstandings.

After trying to make the most of increasing returns to labor and only a few lines after referring to "unused plant capacity," Professor Lester asserts that "most industrial plants are designed and equipped for a certain output, requiring a certain work force. Often effective operation of the plant involves a work force of a given size."[46] To operate within the phase of increasing returns is to operate inefficiently, that is, with an employment of less labor with a given plant than would be compatible with efficient operations. (Because an increase in employment would raise output more than proportionately.) "Effective operation," on the other hand, logically implies employment at or beyond the point where diminishing returns set in. Professor Lester does not seem to be clear which way he wants to argue.[47]

Professor Lester seems to think that substitution between capital and labor can occur only in the form of installation of new or scrapping of existing machinery[48] and that it is supposed to occur "readily" and would, therefore, be "timed" with the wage changes.[49] These are rather common but nevertheless mistaken views.

[45] *I.e.*, the firm realizes that it can enjoy much lower wage rates at lower employment levels or cannot obtain more labor except with substantial wage increases.

[46] *Amer. Econ. Rev.*, Vol. XXXVI, No. 1, p. 72.

[47] Absolutely fixed proportions between factors of production would imply that short-run marginal productivity of labor drops precipitously to zero at the full capacity level of employment.

[48] *Am. Econ. Rev.*, Vol. XXXVI, No. 1, p. 73. See my comments, above, pp. 530–31.

[49] *Ibid.*, pp. 73 and 74.

Professor Lester does not discuss a glaring contradiction in his findings: On the basis of replies to one questionnaire he states that his data indicate "that industry does not adapt its plant and processes to varying wage rates in the manner assumed by marginalists."[50] But on the basis of another questionnaire about adjustments to increases in relative wages, he reports that the introduction of "labor-saving machinery" was given the highest rating in relative importance by the questioned firms whose labor costs were more than 29 per cent of total cost.[51]

The last-mentioned questionnaire apparently was designed to show that wage increases had no important effects upon employment. Six alternative adjustments to increases in relative wages were listed and manufacturers had to give percentage ratings for relative importance. In this popularity contest an item called "deliberate curtailment of output" got the booby prize. Quite apart from the fact that the words were loaded against this item, the result is not in the least surprising. For it is a well-known fact that where competition is not pure (as it rarely is in industrial products), output adjustments to higher production costs take place by way of changes in selling price. Price and product adjustments were another of the alternative items and scored rather well in the poll. If all employment-reducing adjustments—labor-saving machinery, price increases, and deliberate output curtailment—are taken together, they clearly dominate in the importance ratings by the firms.[52] This, or anything else, may not mean much in such an "opinion poll," but it certainly does not prove what Professor Lester wanted to prove. Nevertheless, he contends that "it is especially noteworthy that deliberate curtailment of output, an adjustment stressed by conventional marginal theory, is mentioned by only four of the 43 firms."[53] And he concludes that marginal analysis is all but done for, that "there can be little doubt about the correctness of the general results" of his tests[54], and that "a new direction for investigations of employment relationships and equilibrating adjustments in individual firms" is indicated.[55]

C. *Conclusions*

I conclude that the marginal theory of business conduct of the firm has not been shaken, discredited or disproved by the empirical tests discussed in this paper. I conclude, furthermore, that empirical research on business policies cannot assure useful results if it employs the method

[50] *Ibid.*, p. 73.
[51] *Ibid.*, p. 78.
[52] *Ibid.*, p. 78.
[53] *Ibid.*, p. 79.
[54] *Ibid.*, p. 81.
[55] *Ibid.*, p. 82.

of mailed questionnaires, if it is confined to direct questions without carefully devised checks, and if it aims at testing too broad and formal principles rather than more narrowly defined hypotheses.

The critical tone of my comments on the research projects discussed in this paper may give the impression of a hostile attitude towards empirical research as such. I wish to guard against such an impression. There should be no doubt that empirical research on the economics of the single firm is badly needed, no less than in many other fields. The correctness, applicability and relevance of economic theory constantly need testing through empirical research; such research may yield results of great significance.

Sharp criticism of bad research can be constructive in two respects: it may save some of the waste of time which the published research findings are apt to cause if they remain undisputed and are allowed to confuse hosts of students of economics; and it may contribute to the improvement of research. The chief condition for improved research is a thorough understanding of the theories to be tested. Supplementary conditions are a certain degree of familiarity with the technological and institutional peculiarities of the fields or cases on which the research is undertaken and a grasp of the research techniques employed.

PROSPECTIVE NATIONAL INCOME AND CAPITAL FORMATION IN THE UNITED KINGDOM

By PHILIP S. BROWN*

I. *Introduction*

Even before the war the United Kingdom had fallen behind the United States industrially to an extent that is not generally realized. Output per worker in manufacturing as a whole was between one-third and one-half as great as in the United States.[1] In coal mining, output per man-shift in 1938 averaged 1.14 long tons, compared with 4.37 long tons in the United States. In building construction, labor productivity was probably 60 per cent that in the United States. In agriculture, public utility operation, the distributive trades, and in the performance of personal and business services, labor productivity appears also to have been less in Britain than in America, but the difference was, of course, much less than in manufacturing and mining. Shipbuilding is the only important industrial category in which a labor productivity is known to have been about the same in Britain and America.

The difference between British and American labor productivity before the war was not readily apparent merely from a comparison of living standards because a larger fraction of the population sought employment in the United Kingdom than in the United States and also because there was proportionally less involuntary unemployment in the United Kingdom. Also, residents of the United Kingdom received an appreciable net income from overseas investments and even drew

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[1] Comparative figures of British and American labor productivity, especially in manufacturing, have been the subject of recent controversy among British statisticians. However, the controversy does not, in the writer's opinion, provide any basis for doubting that the difference in productivity was within the range indicated above.

It must, of course, be borne in mind that the greater capital investment per worker in the United States, while it tended to make for lower production costs, increased indirect labor costs so that the difference between British and American real costs of production was never so great as the difference in man-hours directly utilized in mining coal, manufacturing automobiles, etc.

Recent discussion has been stimulated by the studies of L. Rostas, particularly his first article, "Industrial Production, Productivity and Distribution in Britain, Germany and the United States, 1935–37," *Economic Journal*, January 1943. This paper was the subject of discussion at a meeting of the Royal Statistical Society, 21 March 1944, the minutes of which are given in the Society's *Journal*, Part I, 1944. Interest has been further stimulated by several very good government reports dealing expressly with the causes of low labor productivity in the coal, textile, and building industries. These reports are included in the list of recent industry studies by government departments given at the end of this paper.

upon overseas capital in some years; in the immediate pre-war years they imported 200 to 300 million pounds' worth of goods annually for which they did not pay either in goods or services.

Six years of war have widened the gap between British and American labor productivity and the difference in living standards will be quite apparent even after reconversion to a peacetime economy has been achieved. The United Kingdom now has 8 to 10 per cent less domestic capital, exclusive of armaments, than it had before the war, whereas in the United States there has been large net capital formation since 1939. On international account the United Kingdom has incurred huge external obligations and lost a substantial part of its overseas investments; moreover, a further increase in external obligations and a further loss of gold and overseas investments are to be expected. Overseas receipts of interest and dividends have been reduced and some special trading privileges and investment opportunities have been lost.

Anxiety about prospective living standards has prompted the British public to elect a Labor government committed to supply directly more of the nation's wants and to supervise the production and distribution of goods generally. Increase in the direct employment of resources by the government and exercise of extensive price control will necessarily require the allocation of scarce materials on the basis of political considerations. Competitive bidding cannot be allowed to determine the allocation of scarce resources because the backlog of demand, supported by large and unevenly distributed personal and corporate savings, is so huge that in the absence of price control the distribution of many industrial and consumers' goods would be too inequitable. Thus, the allocation of scarce goods—and consequently the resulting distribution of labor—will have to be made by the government.

However, no over-all budget has been presented to Parliament. Neither the Capital Issues Committee nor the proposed National Investment Council promises to be a real planning body. Such indication as has been given, notably by the Chancellor of the Exchequer, of intention to influence the priority and timing of investment, stems from a desire to eliminate cyclical unemployment rather than to insure the allocation of resources to projects of greatest social utility and to avoid the bottlenecks that will occur if the various programs are not coördinated and tailored to fit the ava lable manpower and material resources.

The Labor government's failure to cast up its accounts in the form of a National Plan and to concentrate on the problem of increasing labor productivity is understandable. The ministers, and their staffs, are preoccupied with the government's legislative program. Moreover, it is obviously difficult to get on with reëquipment and plant expansion in industries where institutional charges are in progress, or in prospect.

It is true that institutional reforms have frequently been justified as a means of achieving a more equitable distribution of income and of preventing future unemployment, but it would be most unfair to conclude that Labor Party leaders are more concerned with the redistribution of income and the fear of future unemployment than with increasing national income and making generous provision for the formation of industrial capital.

The following attempt to estimate future national income may contribute to an appraisal of British economic capabilities. The year 1952 has been chosen because it is outside the period of transition to a peacetime economy and yet in most respects is within the foreseeable future. By 1952, those capital goods most urgently needed to balance production and redistribute workers to something like a normal pattern of employment will have been purchased from abroad or have been manufactured at home; the abnormal building repair program will have been completed; the school-leaving age will probably have been raised to 16; the military establishment is likely to have been shaken down more nearly to its normal peacetime size; current receipts and disbursements on international account should have been brought into balance, and repayments of interest and principal on sterling and dollar obligations will have begun.

II. *Population and Civilian Labor Force*[2]

The population of the United Kingdom in 1952 will probably be about 48.8 million, one million greater than in 1939.[3] Despite this prospective increase in total population, the number of persons under 40 years of age will be nearly two million less, as shown by the following estimates of population, by age groups.[4]

[2] The writer is indebted to Miss Edith Strickland of the State Department for her assistance and advice in making the population and labor force estimates contained in this paper.

[3] It is of interest to note that beginning in the early 1950's the number of women of child-bearing age will decline markedly and population is likely to fall thereafter. This inevitable decline in women of child-bearing age may be offset by larger families. If, for example, the 1944 birth rate of 66.1 per 1000 women aged 15–49, which was evidently the highest in 20 years, were maintained, the population would increase rather than decrease during the late 1950's and reach 50,850,000 by 1964.

A Royal Commission on Population, appointed in March 1944, is now conducting a comprehensive investigation in the causes and consequences of recent and prospective changes in Britain's population.

[4] The estimates for 1939 are based on the Register General's figures for England and Wales, adjusted to take account of persons in the British armed forces and of the populations of Scotland and Northern Ireland. Estimates of persons born after 1939 are based on pre-war birth and fertility rates in England and Wales. Recent pre-war German mortality tables were used to estimate the number of persons in each annual age group that would normally live to 1952, and then adjustment was made for war casualties. No adjustment was made for possible net migration to or from the United Kingdom.

Age Group	1939	1952	Change
	(In thousands)		
0–15	11,137	10,813	− 324
16–39	18,469	16,876	−1,593
40–64	13,937	15,799	+1,862
65 and over	4,266	5,335	+1,069
Total	47,809	48,823	+1,014

In view of the prospective increase in the school-leaving age to 16,[5] the labor force will be drawn from the 38 million persons who will be over 15 years old in 1952. By a series of deductions, shown below, the total labor force in 1952 is estimated at 23.3 million, and the civilian labor force at 22.6 million. (Unlike official labor force statistics, this estimate covers Northern Ireland and includes female workers over 59, male workers over 64, and domestic servants of all ages.)

		(In thousands)
Persons age 16 and over in 1952		38,010
Less		
(1) Students	200	
(2) Unemployables, age 16–64	340	
(3) Employable women, age 16–64, who will not seek employment	9,807	
(4) Employable men, age 16–64, who will not seek employment	150	
(5) Persons over 64 who will not seek employment	4,195	
		14,692
Total labor force		23,318
Less persons in armed forces		750
Civilian labor force		22,568

The most important deduction—and the one about which there is most uncertainty—is the number of employable women who will not seek outside employment when all legal compulsions for doing so are withdrawn. On the one hand, it is reasonable to suppose that full employment, better wages for women, and the fact that more women will have received vocational training and will have become accustomed to economic independence will cause more women to seek work in 1952 than sought work in 1939. On the other hand, the number of women aged 50–64 will be 440,000 greater than in 1939 and those aged 16–49 will be 475,000 less. Moreover, a larger number of young women will be students. On balance it would appear that about one-quarter of the wartime increase in employed women aged 16–64 will continue after the war; in other words, 41 per cent of women aged 16–64 who are not

[5] The recently enacted Education Bill stipulates that the school-leaving age is to be raised to 16 as soon as school facilities can be provided, and teachers trained. The raising of the school-leaving age to 15, effective April 1, 1947, has already been announced and it is probable that the school-leaving age will be raised to 16 before 1952.

students and not unemployable will seek employment in 1952, compared with 38.7 per cent in 1939 and 48 per cent in 1944.

The estimate (750,000) of persons in the armed forces in 1952 is less than two-thirds the number which the government expects to have in the armed forces at the end of 1946.[6] A full-time military force in excess of 750,000 would probably require compulsory service of over 12 months. The number of able-bodied boys reaching the age of 18 in 1952 will be less than 300,000, and it is unlikely that more than 450,000 additional persons will enlist voluntarily. (In June, 1939, after an intensified recruiting campaign and with a war looming ahead, voluntary recruits for the armed forces and auxiliary services totalled only 477,000.) On the one hand, conscription and full employment will tend to lessen the number of voluntary enlistments; on the other hand, if military pay (and other benefits) should be increased more than civilian wages (and social services), long-term military service might become more attractive. Two years' conscription, which would probably be necessary to maintain a full-time military force of 1,000,000 is most unlikely.

The total civilian labor force in 1939, including nearly one million 14- and 15-year-olds, appears to have been 22.9 million.[7] Thus, the estimated civilian labor force in 1952 will be about the same, or slightly less, than in 1939. The 1952 civilian labor force, working possibly fewer hours per week, will have to support a population one million larger than in 1939.

Whether income per person in 1952 will be less or more than in 1939 depends not only upon the size of the labor force relative to population

[6] The *New York Times* of March 5, 1946, reported Mr. Attlee as having announced to Parliament on the previous day that the government aimed to reduce Britain's armed forces to 1,200,000 by the end of 1946. Of the 1,200,000, about 100,000 would consist of trainees and the balance would be distributed as follows: Army, 650,000; Air Force, 275,000; Navy, 175,000.

[7] This estimate can be reconciled with the figure for the civilian labor force given in the *Ministry of Labor Gazette* of November, 1945, as follows:

		(In thousands)
Official figure for mid-1939		19,273
Additions to allow for		
1. Domestic servants and other categories of workers in Great Britain excluded from official statistics		
Male	545	
Female	1,400	
2. Older workers (other than domestic servants) in Great Britain		
Males age 65 and over	660	
Females age 60 and over	434	
3. Workers of all ages in Northern Ireland		
Males	425	
Females	200	
		3,664
Total civilian labor force of United Kingdom		22,937

but also upon (1) the quality of the labor force, (2) the extent to which the labor force is employed, (3) the complement of capital equipment and the quality of managerial direction, and (4) the amount of net receipts of interest and dividends from abroad. The change, if any, in the "quality" of the labor force is most difficult to assess but some pertinent observations can perhaps be made.

The remarkable prospective increase in the average age of the civilian labor force, as a result of the exclusion of 14- and 15-year-olds, the larger withdrawal of young men into the armed forces, and the changed age composition of the population, is reflected in the following estimates of the labor force in 1939 and 1952 by age groups.

Age Group	1939	1952	Change
	(In thousands)		
14–15	973	0	− 973
16–39	12,490	11,785	− 705
40–64	8,580	9,642	+1,062
65 and over	894	1,141	+ 247
Total	22,937	22,568	− 369

The significance of the change in the age composition of the labor force is debatable. So far as this writer knows, no studies have ever been undertaken to discover whether absenteeism is greater or less among older workers than among young workers. Likewise, it is not known whether the greater adaptability and other characteristics of young workers are more than offset or less than offset by the vocational experience and other characteristics of older workers. Another uncertainty is to what extent services performed by 14- and 15-year-old boys and girls may be discontinued and the effect of such discontinuance upon the productivity of other workers. The writer's guess is that the change in age composition will tend to raise average labor productivity.

By 1952, British workers will probably be more healthy than in 1939: the lower income groups even now receive better medical attention and more protective foods than they received in 1939, and by 1952 medical services will have been greatly expanded and the caloric value of food rations will have increased; housing will be at least as good as in 1939, and working conditions in factories will be better. The number of workers enrolled in vocational training courses has greatly increased and by 1952 this expansion of enrollment will more than compensate for the diminution of apprenticeship training during the war. The morale of workers may be improved by selective nationalization, full employment, a stronger bargaining position *vis à vis* employers, extended social services, and a generally improved political situation.

All in all, the "quality" of the civilian labor force is likely to be better

in 1952 than in 1939. Other factors, however, must be considered before the change in output per worker can be estimated.

In 1938 about 2,600,000 workers were unemployed.[8] The unemployment figure for 1952, used below, is 900,000, equal to 4 per cent of the estimated civilian labor force. This figure may be too high, in view of the progress already made in establishing new factories in "depressed areas" and the prospect (discussed in Section VII) that there will be no deficiency in the aggregate demand for goods and services. Wartime experience for whatever it is worth suggests that unemployment may average very much less than this when there is a high, effective demand for labor. However, taking account of possible labor strikes, the fluctuations in foreign demand for export goods, and other possible causes of unemployment in peacetime, 4 per cent is probably a reasonable estimate.

III. *Capital Depletion since 1939*

The pre-war national capital of the United Kingdom, exclusive of land, roads, armaments, gold, and overseas investments, was roughly £14 billion distributed about as follows:[9]

	(In millions of pounds)
Private producers' goods:	
Buildings, exclusive of R.R. property	800
Railways	700
Other industrial and commercial equipment and stocks	6,200
Farm buildings, equipment and livestock	500
Private consumers' goods:	
Houses	3,200
Other	800
Property of government and other public bodies:	
Buildings	400
Equipment	1,400
Total	14,000

During the war about £1.2 billion of this capital was destroyed by air bombardment and submarine attack and the remaining capital stock was probably depleted to the extent of about £1.3 billion (at pre-war prices). Some of the bomb damage had been made good by the end of 1945, and under-maintenance is partly offset by surplus war goods having value for peacetime uses, so that net capital depletion by the

[8] In making this estimate, the unemployment rate for non-insured workers was assumed to have been two-thirds the rate for insured workers, which was 12.9 per cent.

[9] The writer has boldly, perhaps indiscreetly, juggled some of the valuation figures of H. Campion *Public and Private Property* (Oxford Univ. Press, 1939), in order to get estimates appropriate to the above classifications. J. R. Hicks, *The Social Framework* (Oxford, 1942), makes certain rough adjustments in Campion's figures, including the separation of houses from other buildings, which the writer has used.

end of 1945 was possibly only £1¼ billion (at pre-war prices), equal to 9 per cent of capital goods, other than land, roads, and armaments, situated in United Kingdom before the war. The following itemization is an attempt to estimate net depletion up to the end of 1945. All of the figures, including official estimates of non-war capital formation, may be very inaccurate; in some cases, the figures are no more than informed guesses.

	In millions of pounds at 1938 prices	
Destruction caused by direct war damage less repairs and replacements:		
1. Buildings and other property on land	725[10]	
2. Merchant marine	50[11]	
Net depletion as a result of failure to maintain stocks, make repairs, and provide for obsolescence:		
1. Government property	75[12]	
2. Privately owned producers' goods	840[12]	
3. Houses	200[13]	
4. Other durable consumers' goods	170[13]	
	—	2,060
Peacetime value of installations and goods manufactured for war purposes, including surplus property purchased from United States Government but excluding merchant ships		−800[13]
Net reduction in non-military capital goods situated in United Kingdom		1,260

The most conjectural of all the above figures is that of surplus war property. The British government in a memorandum presented during the recent Washington negotiations stated that "while these assets ['capital formation in the form of government war expenditure'] may have some peacetime use, their value for this purpose is not likely to be large."[14] This judgment would seem to be too pessimistic. War expenditures in 1939–44 for industrial facilities (factory buildings, plant equipment, coal mining machinery, docks, harbor works, public utilities, etc.)

[10] Total damage to property has been estimated (see *Statistical Material Presented During the Washington Negotiations*, Cmd. 6707, p. 13), as being equal to £860 million at 1938 replace ment costs. Up to the end of 1944, £195 million at current prices had been incurred in making good war damage.

[11] The net reduction in the size of the merchant marine between September 3, 1939, and the end of 1945, exclusive of "returnable ships," was about 5.8 million deadweight tons. Taking £9 per ton as an average valuation for the pre-war fleet, the value (at 1938 replacement costs) of the 5.8 million tons lost and not replaced is £52 million. The depreciation of original and remaining fleet is presumably included under subsequent headings (see footnote 12).

[12] These figures are official estimates of "private net capital formation" and "net non-war capital formation of public authorities" for the period 1940–44. (*An Analysis of the Sources of War Finance and Estimates of National Income and Expenditures in the Years 1938 to 1944*, Cmd. 6623.) It should be noted that these figures are residual items, not based on direct estimates of constituent outlays. Moreover, the greater part of depreciation, normally met out of private outlays on current repair work, is excluded from capital account so that the above figures probably understate the amount of capital depletion of producers' goods.

[13] These figures are estimates made by the writer.

[14] Cmd. 6707, see n. 10.

amount to £1,300 million, and presumably most of these facilities will have substantial use in a peace economy. Even among war goods less convertible and/or less durable such as motor vehicles (£686 million), aircraft, naval vessels, ordnance, etc. (£7,134 million), clothing and other non-combat supplies (£1,000 million) airfields, camps, depots, etc. (£680 million), and remaining goods other than food (£1,267 million), there will certainly be a substantial residue having peacetime value.

In addition to expenditures at home, £3,597 million were expended abroad, a small part of which went to pay for the import of equipment useful for post-war production. Also about £100 million of surplus war property of the United States government has been acquired.[15] Any estimate of the peacetime value of all the surviving goods and installations manufactured for war purposes involves a good deal of guessing, but bearing in mind the large outlay for permanent installations, such as factories, machine tools, power stations, harbor facilities, airfields, roads, and hospital equipment, the judgment expressed in the White Paper cited above is probably mistaken.

Housing and other durable consumers' goods have certainly been greatly depleted, but whether the aggregate of producers' goods has decreased or increased is conjectural. If commercial and industrial property constituted one-fifth of the total bomb damage not replaced, and if producers' goods constitute four-fifths of the present value of surplus war property, then the above estimates suggest that the stock of producers' goods has been depleted by £450 million, or by about 5 per cent, since 1939. If, however, the value of government-owned surplus war stocks should turn out to be 50 per cent larger than estimated above, the present stock of producers' goods must be roughly equal to the prewar stock.

A survey of the capital position of individual industries tends to confirm the above computation that there has been some net depletion in producers' goods. The deterioration of railway buildings, roadbeds, and highways has been substantial; and the average age of both railroad rolling stock and automotive transport has greatly increased. Shipping tonnage is 25 per cent less and ships now in use are on the average inferior to those in use in 1939. In the case of mining, there have been some capital additions, particularly in surface mining which is relatively unimportant, but on balance there has certainly been capital depletion,

[15] The true value of such property may be more or less than £100 million. The only public indication of the value of such goods is the reference made thereto in the *Joint Statement Reciprocal Aid, Surplus War Property and Claims* that the amount due from the United Kingdom shall include "A net sum of $532 million for all other Lend-Lease and Reciprocal Aid items, and for surplus property and the United States interest in installations located in the United Kingdom and owned by the United States Government."

which is reflected in the marked reduction in output per man-shift, from 1.17 long tons in 1939 to 1.00 long ton in 1945.[16]

In the iron and steel industry there has been net depletion, since most of the wartime additions to plant will not be useful in meeting peacetime demands. In manufacturing, there has been marked capital depletion in textile, paper, brewery, glass, pottery, and other industries that have been least essential to the war effort; on the other hand, in the light-engineering field and in certain branches of the chemical industry there has been large net capital formation when account is taken of government-built and equipped factories.

Part of the 56 per cent increase in electric power output between 1939 and 1945 is attributable to new installations. Harbor facilities have been expanded. In the construction industry there has probably been capital formation, as a result of the acquisition of American earth-moving and other equipment, the building of kilns to dry lumber, etc. In the distributive trades and service industries, building deterioration (and destruction resulting from bomb damage) has been substantial and there has been a large depletion of stocks of goods for sale and of equipment (*e.g.*, cutlery and table linen of restaurants, gasoline pumps and stocks of automotive parts carried by local garages, shoe-repair machinery, and laundry equipment). In the case of agriculture, the livestock population has been reduced, grasslands have been plowed up, the soil has been depleted to some extent, and buildings have depreciated; however, such depletion and depreciation have probably been more than offset by an increase of roughly £100 million worth of farm machinery.[17]

The depletion of net external assets was much greater than the net depletion of domestic capital. Recorded disinvestment between September, 1939, and July, 1945, totalled £4.2 billion, of which £1.1 billion resulted from the sale and repatriation of overseas investments, £2.9 billion from the increase in obligations, and £.2 billion from the decrease in gold and dollar reserves.[18] Actual transfer abroad of securities was probably larger and also the destruction and depreciation of British-owned property in Europe and the Far East must have been substantial. Despite the probable excess of external liabilities over external assets in 1952,[19] the United Kingdom will continue to have a net income on ac-

[16] See Table 26 of *Monthly Digest of Statistics* No. 1, January, 1946.

[17] See press reports of address by Minister of Agriculture at Birmingham on September 2, 1945.

[18] Cmd. 6707, *op. cit.*, pp. 10–12.

[19] Prediction regarding the extent to which external assets may exceed external liabilities is hazardous not so much because of the uncertainty regarding the size of the "transition deficit" and the extent to which external obligations will be written down, but because of the uncertainty regarding the pre-war value of overseas investments and the extent to which retained investments will have appreciated in value as a result of the increase in world prices and the decline in interest rates.

count of interest and dividends, because the average rate of interest on both sterling and dollar obligations will be under 2 per cent, whereas the average yield on overseas investments will be greater.

IV. *Labor Productivity*

The presumption is that the productivity of British labor must *now* be appreciably less than in 1939, unless other factors have compensated for the depletion of domestic capital. To be sure, the net depletion of producers' goods is probably not in excess of two years' normal net additions to the stocks of such goods—and may be much less. However, labor productivity is not unaffected by the excessively crowded housing conditions, resulting from the destruction and deterioration of houses and from the increase in population since 1939. The efficiency of workers is lessened by lack of opportunities for relaxation and by an increase in domestic chores, discomforts, and anxiety. Moreover, the uneven distribution of bomb damage causes many workers to travel long distances to and from work and travel generally has become less pleasant and often difficult.

The adverse effects of capital depletion upon labor productivity may be partly offset by greater output per worker in the distributive and service trades. Under conditions of full employment, store clerks, waitresses, ticket-takers, and other employees of "tertiary industry" will probably handle more customers than they did before the war when there was substantial unemployment.[20] For many years, distributors will not offer as great a variety of goods as formerly, or as many supplementary services (including prompt service, which requires salespeople "waiting to serve"). Also "labor scarcity" will reduce, as compared with the pre-war years, the number of low-paid domestic servants and casual employees.

The adverse effects of capital depletion may also be partly offset by new inventions, improvements in production methods not dependent upon new capital, and by the greater efficiency of such capital goods as have been installed since 1939.[21] The following observations may serve to indicate the significance of recent inventions and the extent of improvements in production methods.

[20] Quite apart from restrictions on employment in "unessential industry" which have tended to cause store clerks, waitresses, conductresses, etc., to work harder and longer, there appears to be a tendency toward increasing returns, in the short run at least, in most distributive and service trades. In manufacturing, on the other hand, the pre-war variations of employment and output indicate a fairly constant relationship.

[21] Improvements attributable, on the one hand, to new capital and, on the other hand, to changed methods of production are often difficult to disentangle; indeed, the distinction is conceptually blurred in the case of many improvements which require both special capital installations and changed techniques, neither of which would be practical without the other.

Government research laboratories were greatly expanded and the exchange of information with the United States further increased the store of technical information. (The opinion has been expressed that the United States may have gained more than the United Kingdom by the exchange, since the United States possessed large, well-equipped laboratories and engineering capabilities to exploit the discoveries of British scientists.) Striking technological advances were made in the development of new weapons, but by and large the technology of peacetime industries has advanced far less than the technology of these industries would have been advanced under peacetime conditions. Moreover, since the lag between revolutionary inventions and their commercial exploitation on a large scale is typically a couple of decades, the more important recent inventions (such as those in the fields of electronics and nuclear physics) are unlikely to affect national income materially in the next few years.

In the realm of plant management and product design, a few industries have gained a good deal from their wartime experience in product standardization, job specialization, organization of assembly lines, and other techniques of mass production. This experience, however, has for the most part been restricted to certain branches of the light engineering and building industries, employing fewer than 15 per cent of the labor force in peacetime. The improvements to date in the coal, iron and steel, textile, paper, pottery, leather, brewery, food processing, tobacco, and other peacetime industries have been slight.

Those who talk of the great fillip given to British industry by the introduction of American production methods usually have in mind the increases achieved in a few war industries where mass production was most feasible; they do not take account of the over-all capital depletion; they forget that in other peacetime industries, assembly-line methods must be preceded by standardization, the introduction of special plant equipment, and accompanied by new marketing methods; finally, they not only overestimate the direct impact of recent technological developments on non-war industries, but they also fail to realize the barriers of unconcern that separate industry groups.

Likewise, the contention that the general level of managerial competence has somehow been raised is probably not valid. For six years many young men who would normally have received business training have been compelled to serve in the armed forces and have gained little or no industrial experience. To be sure, many deferments from military service have been made, the most notable being the sweeping exemption granted to technically trained men and to students of the physical sciences and of engineering, but most deferred persons have worked on problems unrelated to those of industry in peacetime.

Kaldor, in estimating future national income, assumes a 13 per cent increase in output per man-hour in 1948 over 1939. This figure, which is an average for all workers (including those in the distributive and service trades, who comprise 40 to 50 per cent of the labor force) is derived simply by projecting an annual increase of 1.3 per cent over this 10-year period. This figure, which he chooses because it is an average of the rates of annual increase in the two periods, 1914–24 and 1924–35, he regards as the "minimum probable" and says: "It appears fairly certain (from various statements made by responsible authorities) that the increase in productive techniques in the course of the present war is much more substantial than that of the last war; and it is by no means improbable that when peace returns the rise in productivity will be found to be even greater than what would have resulted from a mere continuation of pre-war trends."[22] It should be noted that Kaldor's figure of a 10 per cent increase in productivity per man-hour between 1914 and 1924 follows from a 10 per cent reduction in working hours, since home-produced real income per head was about the same in both years. Much of this increase in average man-hour productivity was doubtless directly attributable to the reduction in the excessively long hours of work in 1914, and it is not, therefore, valid to project such a trend. It is remarkable that Kaldor, when comparing the effects of the two great wars upon labor productivity, makes no mention of the enormous depletion of domestic capital since 1939.

The writer's guess is that output per employed worker will be about the same in 1947, after the initial difficulties of reconversion have been overcome, as it was in 1938. It remains to estimate the increase in productivity that is likely to occur in the five years, 1948–52.

During the period, 1924–38, there was substantial unemployment and net capital formation was much less than it would otherwise have been, averaging probably about £300 million a year. Also the occupied population increased by 11 per cent, so that roughly half of the new capital was required to provide the additional workers with housing and tools of production. Consequently, the average annual increase in capital goods of all kinds was probably less than one per cent.

After 1947, annual net capital formation will be larger as a result of more nearly full employment and of the deliberate restriction of consumption; also foreign credits, and possibly reparations to a small extent, may tend to augment capital formation during this period. Furthermore, almost all of the new capital will be available for a more intensive application. The population of the United Kingdom by 1952 will be only 2 per cent greater than in 1939 and the civilian labor force

[22] William H. Beveridge, *Full Employment in a Free Society*, Appendix C (by Nicholas Kaldor) p. 370.

will probably be the same or slightly less than in 1939. Consequently, a more rapid rate of increase in capital per worker is to be expected during 1948–52. Moreover, since housing is likely to constitute about the same fraction of capital formation in 1948–52 as in 1924–38, the rate of increase in the stock of producers' goods per worker should also be much greater. The writer's estimate of the annual increase is about 3½ per cent a year, or 19 per cent in the five years, 1948–52.

If the amount of capital used in production were the only factor affecting output, then it would be reasonable to suppose that the rate of increase in output per man-hour would be less than the rate of increase in the stock of producers' goods. But there are, of course, other factors. As concluded in Section II above, the quality of the labor force may be expected to rise as a result of improved medical care, more food, slightly better housing, better working conditions, increased vocational training, and higher morale; this factor may be significant enough during 1948–52 to increase output per man-hour by about 5 per cent. Also a small allowance must be made for improvements in methods of production and distribution, not primarily dependent upon capital formation. Consequently, output per man-hour of the civilian labor force may very well increase at roughly the same rate as the stock of producers' goods, namely 3½ per cent a year, or 19 per cent in the five years 1947–51.

However, part of the increase in output per man-hour will doubtless be offset by a decline in working hours. In October, 1938, the average work week of nearly six million wage earners in those industries covered by the Ministry of Labor's inquiries was 46.5 hours. In July, 1943, the average was 50 hours and in July, 1945, 47.4 hours. The writer's guess is that the over-all reduction in 1952, compared with 1939, will be about 5 per cent.

Therefore, the increase in output per employed worker from 1948 to 1952 may be put at 14 per cent, or 2½ per cent per year, and in view of the previous judgment that labor productivity would be about the same in 1947 as in 1938, it follows that the increase in 1952 over 1938 will also be 14 per cent.

This procedure of estimation is admittedly unsatisfactory. It is not so crude, however, as the mechanical projection of the past trend of productivity,[23] which disregards the unprecedented effect of the war

[23] To project separate trends for agriculture, mining, heavy industry, textiles, light engineering, the distributive services, etc., and then to weigh each group by its past contribution to the national income would be even more absurd because of the very unequal effect of the war upon capital goods in various industries and because of the marked change in the distribution of employment. Moreover, the data necessary for estimating changes in output per worker for various groupings of workers is very inadequate and therefore the estimation of past trends would necessarily be unsatisfactory.

upon capital formation and the radical change in population trends that has recently occurred. Perhaps equally important, such a projection of the past changes in labor productivity disregards the very real prospect that there will be nearly full employment, at least during 1948–52, and that capital formation will be much more rapid than it was before the war.

V. *National Income in 1952*

By adopting the above judgments regarding the size of the civilian labor force in 1952, the extent to which this force will on the average be employed, and the average increase, compared with 1939, in output per employed worker, estimation of the product of the civilian labor force, at 1938 prices, is merely a matter of arithmetic.

	1938	1952
Civilian labor force	22,938,000	22,568,000
Less unemployed	2,600,000	903,000
Employed workers	20,338,000	21,665,000
Average product of civilian employees, at 1938 prices (product per civilian employee)	£ 216.4	£ 246.7
Product of civilian labor force, at 1938 prices (in millions of pounds)	£4,401	£5,345

Thus, the product of the civilian labor force may be 21 or 22 per cent greater than in 1938 because more persons will be at work and their average output will be greater.

It remains to take account of net income from abroad and of pay and allowances to members of the armed services. Domestically produced income was supplemented in 1938 by net receipts from abroad of £210 million on account of interest and dividends. In 1945, these receipts were only about £100 million,[24] equivalent to 50 or 60 million pounds at pre-war prices. By 1952, net receipts are likely to rise to about £130 million but their purchasing power will be only about £65 million at the pre-war price level.

Pay and allowances (in cash and in kind) of that part of the labor force employed in military service were £78 million in 1938. At 1938 pay schedules, an armed force twice as large as that which was maintained in 1938 would require an expenditure of £156 million. Actually the real rewards required to attract an equal number of volunteers in 1952, under conditions of full employment, will have to be larger and this will involve a transfer of real income from the civilian to the military sectors of the labor force. However, consistency requires in this instance that we accept the 1938 valuation of a soldier's services and not regard an increase in his remuneration as an increase in real national income.

[24] Cmd. 6707, *op. cit.*, p. 10.

An estimation of net national income in 1952 can now be made:

	(In millions of pounds)	
	1938	1952
Product of civilian labor force measured by 1938 prices	4,400	5,345
Net overseas income on account of interest and dividends in terms of 1938 purchasing power	210	65
Pay and allowances of armed forces at 1938 schedules	80	155
Net national income measured by 1938 prices	4,690[25]	5,565

VI. *Division of the National Product*

The division of the national product that occurred in 1938.[26] and a conjectural division for 1952, such as is likely to afford a sort of political equilibrium among competing demands of the various claimants, are as follows:

	1938 Thousands of pounds	1938 %	1952 Thousands of 1938 pounds	1952 %
Consumers' goods and services:				
1. Purchased by individuals and non-profit-making bodies	3,610	77.0	3,895	70
2. Purchased by public authorities	435	9.3	650	12
National Defense	350	7.4	500	9
Capital formation (net):				
1. Overseas	−70		50	1
2. In United Kingdom	365	6.3	470	8
Net national product	4,690	100.0	5,565	100

With population in 1952 one million greater than in 1938, presumably about £4,130 million of consumers' goods and services, in 1938 prices, would be required to restore the 1938 level of consumption. But because of the enormous depletion of consumers' goods and the abnormal volume of necessary repairs and replacements, the 1938 level of consumption can be restored only by an output per person above that of 1938.

The above estimate of consumers' goods and services in 1952 allows for a 10 per cent increase over 1938. About half of this increase is likely to be accounted for by increased purchases by public authorities of medical, educational, and other social services. As a result of increased social services and more equitable distribution of food and clothing, consumers will be appreciably better off in 1952 than in 1938. As com-

[25] The official estimate of net national income at factor cost (*i.e.*, after deducting indirect taxes) has been raised by £70 million to adjust for inventory losses resulting from price changes in order to arrive at the value of the national product at constant prices.

[26] The division of national product in 1938 can be computed from data given in Cmd. 6623, especially Table 7. The above figures exclude indirect taxes of £638 million; subsidies of £15 million are included in the figure for consumers' goods and services purchased by individuals and non-profit making bodies.

pared with 1943 and 1944, the output of consumers' goods and services will be nearly 50 per cent higher.[27]

The size of the armed forces predicted above is twice that of 1938 and if expenditures (measured in 1938 prices) were also twice as great, £700 million would be required. However, in 1938 the armament program was under way so that this comparison is not relevant. From 1925 to 1936, when there was no appreciable change in the size of the forces and no armament program, full-time personnel averaged under 350,000 and annual defense expenditures were about £115 million. In 1952, pay and allowances to military personnel are likely to be higher relative to the rewards of civilian workers; maintenance expenditures of the greatly expanded military establishment will be proportionately greater than the increase in personnel, despite the present surplus of many supplies; also, the expenditure on new weapons will surely be several times greater than annual expenditures in the period 1925–36, when equipment generally deteriorated and became obsolete. Consequently, an up-to-date military establishment commensurate in size with the prospective number of persons in full-time service may require about £500 million in 1938 prices (exclusive of indirect taxes on goods purchased) and thus constitute about 9 per cent of net national expenditures at factor cost, compared with 7.5 per cent in 1938, and 50 per cent in 1944. About one-third of the military outlay will be required for pay and allowances, and the balance for operational expenses, repairs, developmental work, and the manufacture of new weapons.

It is plausible, and probably valid, to argue that the United Kingdom might be militarily stronger 10 or 20 years hence if resources were currently diverted from maintenance of a military establishment to the formation of industrial capital, especially in view of the possibility that the present types of weapons and the present type of military training may have much less defensive value in the future. However, the British leaders are alert to present dangers and there is no likelihood that security in the near future would be sacrified for security in the distant future even if the choice were recognized.

The government will probably have committed itself to repayments, on both dollar and sterling obligations, equivalent to about £50 million at 1938 prices. If these repayments are financed out of current income, then £50 million fewer goods and services will be available for domestic use. A net outflow of capital may, of course, not occur; indeed, if the prospective yield on new investment is greater at home than abroad,

[27] Consumers' expenditures (adjusted for price changes, indirect taxes, and subsidies) were 22 per cent lower in 1943, and 20 per cent lower in 1944, than in 1938. These figures do not take full account of the marked qualitative deterioration of goods and services. On the whole, private and public expenditures for current civilian consumption probably yielded 25 per cent less satisfaction than in 1938.

it is to the advantage of the United Kingdom to finance necessary capital repayments by borrowing or by the sale of overseas investments. However, in the absence of foresight about comparative yields, it is probably best to assume that repayments on dollar loans, commencing in 1951, will be financed out of current income.

The housing goal appears to be about 400,000 new houses annually. This goal can probably be achieved by 1952, when the bulk of the present backlog of repairs has been reduced and when the manufacture of building supplies and the partial prefabrication of houses will have been greatly increased. If it be assumed that 200,000 new houses plus normal repairs to old houses approximately offsets annual depreciation and obsolescence, then the balance of residential construction can be regarded as net capital formation. New houses, which, on the average, will have 20–30 per cent more floor space and will be better equipped than houses built before the war, will probably be worth about £750 apiece, in 1938 prices, so that about £150 million of net capital formation will consist of residential construction.

The London *Economist* has strongly objected to so large a diversion of resources to housing. It has argued that the need for industrial reequipment is more urgent, that the number of families is likely to commence to decline in a decade or so, and that it is desirable to reserve a substantial part of the rehousing program for the time when there may be prospect of unemployment. But regardless of whether one deplores or applauds the large allocation of resources to housing, it appears that such an allocation is politically necessary and that the government is getting on with the job.

The remaining £320 million of national product will be available for reëquipping and expanding domestic agricultural, industrial and commercial facilities and for increasing stocks of raw materials, goods in process of manufacture, and finished goods in the hands of distributors. This is probably more than has been made available for such purposes in any past year and would probably be sufficient to prevent a further widening of the gap between British and American labor productivity. Indeed, if the more up-to-date factories were operated two or three shifts a day, the increase in labor productivity might be such as to reduce the gap. At present, however, it is impossible on the basis of publicly available data to predict, except perhaps in the case of coal, how much new investment is necessary to achieve a specific increase in labor productivity. It is in the drawing up of specific investment plans for individual industries and in estimating the marginal yields (in terms of real savings of labor and materials) of such investments that the most constructive planning could be achieved.

In the case of coal mining, an investment of £200 million would

probably double output per man-shift and make possible an output of 250 million long tons annually by 450,000 employees,[28] compared with 182 million tons by 709,000 employees in 1945. It is pretty clear that the coal mines should be permitted to make large capital expenditures. In general, however, capital outlays are likely to yield higher returns in the light manufacturing industries than in the heavy industries, such as steel, construction, and shipbuilding industries. It is not to be expected that planning can indicate the optimum distribution of new capital among industries, but a central planning body deliberately attempting to maximize the yield of new investment in essential industries could doubtlessly effect a greater over-all increase in labor productivity than is likely to occur otherwise. In the absence of such a body with professional advisers, political pressures and popular misconceptions are likely to be the sole determinants of the allocation of resources. For example, the irrational contention that export industries should be given priority over domestic industries is likely to prevail even where production for domestic use may be essential and may offer prospect of greater marginal saving from a given amount of new investment.

VII. *The Prospect of Full Employment*

It remains to consider the assumption that there will be no deficiency in the total demand for goods and services.

From 1939 to the end of 1944, consumers purchased £770 million less clothing and £703 million less durable household goods than they would have purchased had the 1938 level of consumption been maintained. Moreover, there was considerable unemployment in 1938, and the range and attractiveness of consumers' goods were less than they are likely to be in the future. Since the amount of such goods annually available for domestic purchase probably will not reach even the 1938 level until about 1950, and since the increase in personal savings, compared with 1938, will probably be much greater than the increase in commodity prices, the demand for durable consumers' goods is likely to be abnormally large until 1955 or thereabouts.

In 1945 there were about 12 million habitable houses in Great Britain. By 1952, nearly a million additional housing units will be needed to meet the 1945 deficit and the further increase in families by 1952. Since most of the building labor force will be engaged in maintenance

[28] These figures are based on the estimated developmental costs of a new coalshaft recently opened at New Calverton in S E Notts, the modernization programs of 10 companies summarized in Appendix IV of the Reid Report (Cmd. 6610), and the opinion of an American mining engineer with experience in Britain regarding the average cost per ton of annual production of developing new mines. Also, other scattered data on the cost of opening new mines and modernizing old ones tend to confirm the above judgment of what an investment of £200 million might achieve.

and repair work for several years and since part of the new construction achieved in 1946–47 will consist of work in progress, it is unlikely that more than $1\frac{1}{2}$ million houses will be completed before 1952. Thus, the prospective construction of new houses during 1945–51 will provide replacement for less than 5 per cent of existing houses.

Since about 6 million houses in Britain will be over 50 years old in 1952 and since about 2 million others will be 30–50 years old, the replacement need is apparent. After 1952, when the backlog of repairs is eliminated, a building labor force of one million could probably be utilized until 1970 or 1975 replacing pre-1914 houses and commercial buildings and performing normal maintenance work. (Actually, of course, many of the $4\frac{1}{2}$ million houses built between 1919 and 1939 were very poorly constructed and will need replacement more urgently than some which were built before 1919.) A program of this magnitude, involving the elimination of many urban slums, would require large subsidies for which there is sure to be strong popular support.

The outlay for medical, educational and other social services, provided mainly by the government, will be stabilized at a much higher level than that of 1938.

The demand for private producers' goods will be sustained for many years not only by expanding consumer demand but by the backlog of deferred maintenance and by extensive obsolescense. In addition there will be a large unsatisfied demand for public undertakings, such as airports, roads, schools, and clinics. Also, the government may stockpile certain foods and raw materials as protection against temporary shortages, price squeezes, and wartime blockade.

The expansion of educational facilities will increase the number of students over 15 years old, and more generous old-age pensions will also tend to reduce the labor force. Finally, the demand for shorter hours will be more insistent as the standard of living rises.

It is almost certain, therefore, that there will be no deficiency of effective domestic demand for goods and services in 1952, and for several years thereafter. Should economic depression in the United States reduce world demand for British exports, the United Kingdom could temporarily maintain employment in most export industries by allotting a higher fraction of the output to the domestic market.

Thus, for the first time since World War I, there is virtual certainty of uninterrupted full employment in the United Kingdom for a decade hence. Yet, ironically, this situation comes at a time when the fear of unemployment is most general and when there is great demand for tax concessions, subsidies, more generous unemployment insurance, and public works as a means of insuring full employment. To be sure, it is generally recognized that there will be full employment for three or four

years, but there is no general realization that full employment for at least a decade is virtually assured. The unfortunate aspect of this misapprehension is that labor unions which mistakenly fear unemployment a few years hence may not coöperate fully in the introduction of labor-saving machinery. Shorter working hours may be advocated on this account. Also it is likely that many persons may cling to low-paid, but fairly secure, jobs of the "personal servant" type simply because they fear being unemployed a few years hence if they take factory or other industrial jobs. Concern over unemployment may also lead to private spending of less social utility than alternative public expenditures which can be deferred as a reserve against future unemployment.

Even in the longer view there is a good chance of continued full employment in the United Kingdom not only because of the prospect of high propensities both to consume and invest, but also because of the general recognition by a sophisticated electorate that unemployment can be avoided and that no cabinet that permits unemployment should be retained in power. It may be that the maintenance of full employment will require more and more governmental control over prices and wages to prevent monopolistic elements in the economy from restricting output and employment opportunities, and it may be that more industries will have to be nationalized if capitalists do not take advantage of favorable investment opportunities. But the public is prepared for such measures.

If the export industries were subjected to prolonged curtailment on account of unemployment or increased protectionism in the United States, the United Kingdom—in view of its strong bargaining position—could probably form a trading association, excluding the United States, in which each member agreed to increase its imports from other members. Thus the shortage of dollars could be prevented from progressively reducing world trade. The changed composition of imports consequent upon the transference of British purchases from the United States to other countries would result in some disadvantage, but at least large unemployment could be avoided by such a planned maintenance of international trade.

Should the United Kingdom maintain full employment for 15 or 20 years, as it may very well do, its industrial capabilities would expand by 50 per cent or more and its social order would become increasingly stable. Labor productivity, though likely to remain less than in the United States, would continue to exceed that of any other major country. This is the principal reason for optimism. With respect to total economic capabilities, the United Kingdom must inevitably be far outstripped by Russia and United States, whose populations are rapidly increasing.

Selected List of Recent Industry Reports by British Government Departments

Building:

Methods of Building in the United States. (Bossom Report) Issued by the Ministry of Works. January, 1944. SO: 70–439.

Contains some comparative data on costs and labor productivity in Britain and America, but does not contain a detailed factual survey the British building industry.

Post War Building Studies (Nos. 1–23). Issued by the Ministry of Works. SO: 70–441.

These are more in the nature of guides to builders than industrial studies, but they reflect the state of industrial development in a number of fields.

Housing Manual, 1944. Issued by the Ministry of Works, September, 1944. SO: 70–454.

Technical Appendices. November 1944. SO: 70–454–1.

There have been other, mostly short reports on training for the building industry, use of standards in building, placing and management of contacts, etc. Also there have been a number of formidable reports on town planning and land utilization. The much debated Barlow, Uthwatt, and Scott reports have been followed by the *Town and Country Planning Act of 1944*, the *Greater London Plan, 1944*, the *Merseyside Plan, 1944*, and other reports on housing, city planning, and hydroelectric developments.

Coal:

Coal Mining: Report of the Technical and Advisory Committee (Reid Report). March, 1945. Cmd. 6610, 149 pp.

This report, which contains a good factual survey and over 100 specific recommendations for improving mining techniques, was submitted by a committee composed not of outside experts but of managers and owners from within the industry. None the less, the report is highly critical of management in the coal industry. This report is reviewed by A. Beacham in an article, "Efficiency and Organization in the British Coal Industry," in the June-September, 1945, issue of the *Economic Journal.*

Coal Report of United Kingdom Open Cast Coal Mission to the United States. Issued by the Ministry of Fuel and Power. January, 1945. SO: 70–9999.

Coal Mines Mechanization. by G. M. Gullick, mechanization adviser to Ministry of Fuel and Power. September, 1945.

Coal Mining Industry Quarterly Statistical Statements of Costs of Production, Proceeds, and Profits of the Coal Mining Industry for the 3rd Quarter of 1944 and the year 1945. Cmd. 6814.

The report of the American Technical and Economic Mission to the

United Kingdom in June and July, 1944, sponsored by the Combined Production and Resources Board, has never been publicly released.

Probably the best recent non-governmental study of the coal industry is *New Deal in Coal* by Harold Wilson, published by Cole and Co., 1945.

GAS:

The Gas Industry. Report of Committee of Enquiry. December, 1945. Cmd. 6699. 57 pp.

IRON AND STEEL:

Reports of the British Iron and Steel Federation and the Joint Iron Council to the Minister of Supply. May, 1946. Cmd. 6811.

TEXTILES:

Report of Cotton Textile Mission to the United States. Ministry of Production. October, 1944. SO: 70–457.

This report contains a wealth of comparative data which is further analysed by L. Rostas in an article, "Productivity of Labor in the Cotton Industry," in the June-September, 1945, issue of the *Economic Journal.*

Cotton. Working Party report published by Board of Trade. May, 1946. SO: 51–268–2. 278 pp.

Good factual survey and good analysis.

GENERAL:

Distribution of Industry Act. June, 1945. 8 & 9 geo. 6 ch. 36

National Water Policy. April, 1944. Cmd. 6515.

Domestic Fuel Policy. Report by the Fuel and Power Advisory Council. March, 1946. Cmd. 6762.

Industrial Opportunities in the Developmental Areas. (Articles reprinted from the Board of Trade Journal.) Issued by Board of Trade, March, 1946.

The above-listed government documents are available through the British Information Services, 30 Rockefeller Plaza, New York 20. This agency has available for distribution a pamphlet entitled, *Select List of White Papers and Other Important Government Documents*, covering the period September 1939 to September 1945, and also a booklist entitled, *British Civilization and Institutions* (4th ed.), compiled by the British Council. The latter list includes private as well as government publications and covers the inter-war period as well. For a recent and fairly comprehensive listing of studies of British industry, including those in economic and trade journals, the reader may wish to refer to the footnotes on pages 65–124 of Alfred Kahn's *Great Britain in the World Economy* (New York, Columbia Univ., Press, 1946).

MONETARY REFORM IN LIBERATED EUROPE

By FRED H. KLOPSTOCK*

Since the autumn of 1944 a large number of European countries, with a view to controlling the monetary and financial legacy of war and occupation, have embarked upon monetary reform experiments of great interest to the student of monetary theory and practice. While differing in detail from country to country, these reform programs have generally provided for the withdrawal of most, if not all, of the outstanding notes and for their conversion into new currency. In most cases, only a moderate part of the withdrawn currency has been exchanged, the remainder being blocked in bank accounts from which withdrawals or transfers may be made only up to specified amounts or for specified purposes. Simultaneously, in most countries, the same or similar restrictions have been imposed on all or part of the bank deposits existing at the time of the adoption of these measures. Subsequently the blocked balances resulting from these operations have been partly released and additional portions have been or are about to be absorbed by the issue of government securities and by special capital levies and war profit taxes.

The broad objectives of most of these post-war monetary reform schemes have been to exert a restraining influence on the public's expenditures, to force people to seek employment by making them dependent on current income instead of past savings, and to deprive the public of funds with which to purchase in black markets. In some countries, the conversion of currency has been chiefly an instrument for the detection of concealed wealth held in monetary form and of income tax evasion during the war period. An incidental purpose of the reform measures has been to ascertain and cancel the amount of notes held by the enemy and lost or destroyed in the course of the war. Unification of the currency has been another, though never the sole, objective in countries where a multitude of currencies have been introduced during the war. This paper will attempt to analyze the results, techniques and lessons of these monetary reform measures in liberated Europe against the background of the monetary and financial situation in the countries concerned.[1]

I. *Precedents for Contemporary Reform Measures*

While monetary reform may be "as old as money itself,"[2] an examina-

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[1] For a bird's-eye view of monetary reform in Europe, see my article, "Monetary Reconstruction in Continental Europe," *Commercial and Financial Chronicle*, April 18, 1946.

[2] Paul Einzig, *Monetary Reform in Theory and Practice* (London, 1936), p. 4.

tion of its history yields few, if any, precedents for the major schemes under review in this paper.[3] It is true, however, that certain currency decrees issued after the First World War exhibit some similarity to present-day monetary experiments in that they provided for a conversion of some part of the currency in circulation into forced loans.[4] Czechoslovakia's currency reform decree of February 25, 1919, for example, which authorized the stamping of all notes of the Austro-Hungarian Bank and the conversion of 50 per cent of such notes into non-negotiable government bonds,[5] is sometimes cited as an example for what has been attempted in Europe in 1944–45. But though this decree and the capital levy which accompanied it was, in the words of Keynes, "the only drastic courageous and successful measure of finance carried through anywhere in Europe at that epoch,"[6] in scope and comprehensiveness it was substantially less ambitious than present-day monetary experiments. Greece's currency reform decree of April 7, 1922, under which all notes in circulation were divided into two, with one part to remain in circulation and the other to serve as a bond bearing an interest rate of 6½ per cent,[7] is another measure worth mentioning in this context since it apparently served as a model for the reform experiment carried out in Finland at the turn of last year.

The difference between contemporary monetary reform programs and those of the previous post-war era can be attributed to the much milder nature of present-day monetary maladies. Most monetary reform programs under discussion were carried out before inflation had achieved major proportions. To a considerable extent, they were of a prophylactic nature in that their primary aim was to prevent price increases from gaining momentum rather than to bring an already existing hyperinflation to a halt. In most cases, monetary stabilization schemes after the First World War were put into operation only following a protracted period of currency disturbances and not until inflation had run its course and brought about a depreciation of the established currency units to a small, and in several cases infinitesimal, fraction of their pre-war values.

[3] For a history of currency reform in Europe before World War I, see R. G. Hawtrey, *Currency and Credit* (London, 1919).

[4] For a history of currency stabilization in Europe after the last war, see *e.g.*, John Parke Young, *European Currency and Finance*, U. S. Senate Gold and Silver Commission, Series 9, Vol. I and II (Washington, 1925); Elemer Hantos, *Das Geldproblem in Mitteleuropa* (Jena, 1925); Michael A. Heilperin, *Le Problème Monétaire d'après-guerre* (Paris, 1931); D. T. Jack, *The Restoration of European Currencies* (London, 1927).

[5] Alois Rasin, *Financial Policy of Czechoslovakia During the First Year of its History* (London, 1923), p. 25.

[6] John Maynard Keynes, *Monetary Reform* (New York, 1924), p. 159.

[7] E. Pharmakides, "La Situation Monétaire en Grèce," *Revue Economique Internationale* (Brussels, December, 1922).

In a few countries it then became necessary to establish an entirely new currency system and to introduce a new unit of account.

In sharp contrast to the procedure adopted in 1944–45 when the liberated countries of Europe converted the money introduced by Germany and her satellites into new national currencies in a manner which reduced the circulation drastically, unification after the last war was in no case, except in Czechoslovakia, accomplished without further monetary expansion on a large scale.[8] In Poland, the currency unification of 1920 was accompanied by a sharp expansion of the circulation of Polish marks, and the establishment of a stable currency involved the exchange of marks into newly issued gold zlotys at the rate of 1.8 million to 1.[9] In Hungary, the Note Institute, set up in 1921, converted all old banknotes and other paper currencies into an equal amount of state notes. Stabilization was effected only after the currency circulation had reached 3,000 billion crowns in the middle of 1924.[10] InBelgium where in 1944 monetary reform achieved a drastic contraction of the money supply, the conversion of German marks into francs in 1918–19 was carried out without any major effort to withdraw currency from circulation and actually involved the recognition of the inflation of the occupation period.[11]

II. *Monetary Developments in Europe During World War II*

The genesis, methods and characteristics of present-day European monetary reform programs can only be understood in relation to monetary developments on the continent during the war. As elsewhere, the expansion of currency and deposits in German-controlled Europe was on a huge scale. But, unlike in most belligerent countries, the factors responsible for this expansion were largely of external origin. Central bank financing of German exactions rather than of domestic war expenditures have been primarily responsible for the growth of the money supply in occupied Europe. While in the United States and Canada real civilian consumption increased during the war,[12] it declined drastically throughout occupied Europe—not only because of German acquisitions of civilian goods, but also because of physical destruction and the disruptive impact of the war on the civilian economy. The gap between the income stream and the flow of goods and services available for con-

[8] Jack, *op. cit.*, p. 12.

[9] Young, *op. cit.*, Vol. II, p. 177.

[10] A. Popovics, "Hungarian Currency and Banking" in *European Currency and Finance*, Vol. I, p. 233.

[11] Henry L. Shepherd, *The Monetary Experience of Belgium 1914–1936* (Princeton, 1936), p. 18.

[12] Combined Production and Resources Board, *The Impact of the War on Civilian Consumption* (Washington, September 1945), p. 21.

sumption was substantially larger in the area under discussion than in this country and the inflationary threat growing out of the wartime credit expansion was, therefore, correspondingly greater.

The financial techniques of German exploitation are familiar and require little elaboration.[13] German occupation levies and purchasing of goods and services via the clearing mechanism or by payment in blocked reichsmarks have been at the root of all monetary developments of occupied Europe. The fact that in France, Belgium, Holland and Denmark as much as 52 per cent of total official outlay during the three and a half war years up to the end of 1943 was for German account, and that in 1943 the ratio had risen to two-thirds,[14] illustrates the degree of German exploitation of the economic resources of the continent. The administrations of these and other countries where German exactions were of similar, if not larger, proportions were unable to raise the funds demanded by the nazi Reich through taxation or loans from the public, and most of Germany's acquisitions of goods and services, whether by German importers or by occupation armies, were, therefore, financed by credit expansion, chiefly on the part of central banks.

As these newly created funds were disbursed, inflationary pressures upon prices of goods in scarce supply increased and consumer incomes expanded. Nevertheless, owing to the exhaustion of inventories and because of rationing and other quantitative controls which in most of German-occupied Europe were applied with considerable efficacy, a large part of these incomes remained unspendable and were diverted into idle balances. Moreover, a not inconsiderable proportion of the funds made available to Germany was spent for existing capital equipment or served to finance other items which passed through the capital account of the balance of payments, such as remittances of savings by foreign workers in Germany to their homelands. To the extent that these funds were not expended by their recipients, the credit expansion did not create even a primary expansion of income.

While all of the countries occupied or controlled by Germany have experienced substantial increases in their money supply, the rate of expansion has been most rapid in the Balkans. In Yugoslavia, for instance, where, as in other Balkan countries, price inflation had already during the war assumed large proportions, the note circulation rose from 15.3 billion dinars at the end of March 1941 to the equivalent of more than 250 billion dinars in April, 1945.[15] In Belgium currency and

[13] See, *inter alia*, Thomas Reveille, *The Spoil of Europe* (New York, 1941); Frank Munk, *The Legacy of Nazism* (New York, 1943); League of Nations, *World Economic Survey 1942–1944* (Geneva, 1945).

[14] Bank for International Settlements, *Fourteenth Annual Report* (Basle, 1944), p. 214.

[15] *Economist*, January 19, 1946.

demand deposits of commercial banks rose from 39.5 billion francs in December, 1939, to 143.9 billions at the end of September, 1944.[16] In the Netherlands the money supply expanded from about 1.7 billion guilders at the end of 1939 to 7.1 billions in April, 1945.[17] In Norway note circulation and demand deposits in commercial banks increased from 808 million kroner in March, 1940, to almost 4.7 billion kroner on May 7, 1945.[18] The corresponding figures for Denmark are 1.3 billion and 4.4 billion kroner. In all these countries, except in Yugoslavia, the increase in the money supply outstripped the rise in prices by a large margin. By and large, price control in that area was remarkably successful.

Throughout German-controlled Europe, as practically everywhere else, the expansion in the aggregate money supply was accompanied by a relatively greater growth in currency holdings than in bank deposits, while demand deposits tended to rise faster than time and savings deposits.[19] In part, the preference for currency relative to deposits can be traced to the desire of the public to keep on hand, under the special circumstances of war and occupation, larger currency balances relative to deposits in order to meet unforeseen contingencies. Efforts to reduce taxation by concealing income may also have been factors in some cases. But the major reason was probably the fact that currency was the sole acceptable means of payments in the black market.

Upon eviction of the German armies, the liberated countries were subjected to new financial demands at a time when their resistance to further monetary expansion was at a low point. The military expenditures of the Allies for local supplies and services, and particularly the issue of local or military currency for the pay of their armies, were a major factor in the growth of circulation during the final phases of the war in countries such as Italy and Belgium. The introduction of military notes, moreover, further added to the currency disorder in countries which had been dismembered during the war and where numerous new currencies, as well as those of Germany and some of her satellites, had been put into circulation.

The general liquidity engendered by the credit expansion of the occupation and liberation period constituted an important obstacle to plans for economic reconstruction and acted as a drag on economic recovery. People holding substantial amounts of cash preferred to live in idleness or to engage in black-market operations rather than to seek

[16] Bank for International Settlements, *op. cit.*, p. 225.

[17] League of Nations, *Monthly Bulletin of Statistics*, February, 1946.

[18] Kaare Petersen, "The Monetary Reconstruction Program in Norway," *Norwegian American Commerce*, February, 1946.

[19] Comparing merely the increase in currency and in demand deposits of commercial banks, Norway and Denmark are the only countries under German occupation where the latter have risen faster than the former.

productive employment which would yield earnings sufficient to buy only in official, but not in black markets. In many liberated countries the spread of black markets not only discouraged hard work, but also promoted a speculative atmosphere and gave rise to undesirable shifts in the distribution of income in favor of speculators, war profiteers and collaborationists. Tax evasion—in some countries considered a patriotic duty during the period of occupation—was widespread. Moreover, with business in a position to fall back on its liquid resources, the traditional instruments of monetary control over the aggregate demand of the public had lost their potency.

At the end of the war, therefore, the basic problem of monetary statesmanship in liberated Europe was how to regain a measure of control over the money supply; how to mop up idle money before it could become activated and exert income-expansionary effects while the flow of civilian goods was still a trickle. An answer had also to be found to the question of how to reduce disposable income where such hoards had already begun to get into motion and how to bring into the open and subject to taxation the monetary wealth concealed by profiteers and collaborationists. Currency unification in countries where several currencies were circulating posed another group of perplexing problems. These issues arose at a time when, owing to shortages of raw materials, transportation, electrical power, etc., production throughout liberated Europe was at a low level, so that even small amounts of dissaving tended to generate inflationary pressures of great strength.

III. *Monetary Strategy in Liberated Europe*

The methods employed by European governments in their attempts to deal with the monetary aftermath of war and occupation may be most conveniently divided into two major, though interrelated groups: (1) The withdrawal of excess currency and the blocking of bank deposits with a view toward bringing the huge liquid funds under direct control of the monetary authorities; and (2) the sterilization of blocked as well as unblocked funds by means of fiscal instruments, such as the issue of non-marketable securities, capital levies, and war profit taxes. While generally fiscal measures of this type have been executed or are about to be executed within the larger framework of blocking schemes, there are a few cases where fiscal measures of a primarily monetary motive were not preceded by any blocking whatever.

Belgium's monetary reform decree of October 6, 1944, issued shortly after the arrival of the government-in-exile in Brussels, was the first in the long series of similar measures providing for the blocking of currency holdings and bank deposits. Poland followed suit early in 1945 with several decrees under which German, German-sponsored and Russian

currencies were exchanged into a new national currency and excess currency holdings blocked. Similar operations were carried through in Yugoslavia in April, when limited amounts of a new currency, called the dinar of the Federative and Democratic Yugoslavia, were issued to holders of currencies put into circulation during the occupation period. All currency holdings in excess of the exchanged portion, as well as bank deposits, were blocked. Denmark in July, 1945, blocked part of the public's currency holdings. On September 8, Norway issued a decree under which a part of the money supply was blocked. In the Netherlands, the blocking program was carried out in two phases. In June, 100 guilder notes ceased to be legal tender, but could be deposited in bank accounts where they were blocked, except for payments of taxes. In September, all remaining currency holdings were withdrawn and blocked except small amounts of newly issued notes. All bank deposits were frozen as of September 26. Czechoslovakia's currency conversion decree of October 19, 1945, established a new crown currency and blocked a sizeable part of the country's money supply. Austria's currency reform law of November 30 provided for the exchange of all currency in denominations of over 5 reichsmarks and 5 military shilling notes into a new national currency, the Austrian shilling. Currency holdings in excess of 150 military shillings or reichsmarks, as well as most of the existing bank balances, were blocked. An elaborate currency conversion program was carried out in France in June, 1945, involving, however, no blocking at all.

Capital levies, increment taxes and forced loans for the purpose of mopping up part of the increase in the money supply, have been adopted or are, according to present indications, about to be adopted in a large number of countries. A capital levy and war profits taxes were imposed in Belgium in October, 1945, and at the same time blocked balances were converted into a forced loan. Finland, under a decree which became effective on January 1, 1946, issued a forced loan to holders of large denomination notes. The Norwegian government has presented to the Storting a bill providing for a highly progressive tax on war profits. A progressive capital levy and war gains tax, applicable to all increases in wealth between January 1, 1939, and November 15, 1945, is about to be adopted in Czechoslovakia. In Denmark, the Parliament has under consideration a bill providing for a progressive tax on war profits and a forced stabilization loan to be subscribed by persons of large means. The Netherlands government has submitted to the Dutch parliament bills calling for a capital levy and the taxation of profits made during the war. Capital levies falling solely on monetary wealth have been enacted in Yugoslavia and Hungary.

A. *Blocking as an Instrument of Monetary Policy*

The wide popularity of the blocking device arises from its great potency as an instrument for controlling the volume of the public's expenditures out of balances existing at the time of the adoption of the freezing decrees. By preventing the sudden release of idle balances blocking performs a valuable function wherever potential dishoarding constitutes a major threat to monetary stability. The immobilization of idle balances is, however, only one of the major objectives of the blocking feature of monetary reform programs. Of at least equal importance is to deactivate those funds already moving in black markets where they tend to produce income-expansionary effects; the extent to which this purpose is achieved is the criterion by which blocking as an instrument of monetary policy is largely judged in actual practice.

From attempts to block the active component of the money supply, however, arise some of the most baffling problems with which monetary reform programs have been confronted. Such blocking involves the imposition of restrictions over the disposal of funds needed for legitimate transaction purposes. Unless used with great caution, the blocking of active money may deprive commerce of its working capital and individuals of funds for the purchase of those essentials which cannot be acquired out of current earnings. If the blocking is overly strict, therefore, it may generate deflationary disturbances of undesirable dimensions; if it is too loose, the counter-inflationary force of the reform program will be impaired. The success of blocking measures largely depends on the ability of their authors and administrators to strike a proper balance between these two extremes. The determination, therefore, of how much of the public's currency holdings to convert into new notes and what part of bank deposits to exempt from blocking or to unfreeze, as well as the selection of purposes for which blocked funds may be released, constitute the most crucial policy decision in the formulation of a blocking program.

A drastic contraction of the currency supply has been the major line of attack via monetary channels on the problem of black market control. The conversion of excessive currency holdings into bank deposits, the use of which can be easily traced, deprives black marketeers as well as their customers of the cash necessary for illegal trading. The first steps in the execution of monetary reform laws are, therefore, the invalidation of most, if not all, of the banknotes in circulation and the issue of limited amounts of new currency in exchange for old currency. In almost all countries, the currency conversion program has given rise to numerous and perplexing issues of a technical nature which have not always been successfully resolved. In several cases, the withdrawal of old notes was

accompanied by a short period of extreme monetary stringency only partly alleviated by small grants of new currency issued at the outset of the conversion program. As a result and in some cases in anticipation of currency conversion programs, currency holdings for a brief period have dropped precipitously. In Belgium, for instance, they dropped from more than 100 billion francs at the end of August, 1944, to 28.5 billions at the end of October, and in Norway from more than 3 billion kroner at the end of April, 1945, to 1.5 billions shortly prior to the conversion, which began on September 8, and to slightly over 1 billion kroner at the end of September.

Most monetary reform decrees have left small-denomination notes and coins in circulation—either because new notes of small sizes had not yet been printed or in order to cushion the impact of the withdrawal on the economy—but the result has been, in a few instances at least, the hoarding of small-denomination notes and coins and the emergence of a dual price system, one for payment in small-denomination notes and the other in notes about to be withdrawn.[20]

Except in Greece, where in November, 1944, in a futile effort to end inflation and in order to provide a usable unit of account, all notes were exchanged at the rate of 50 billion old drachmas for 1 new drachma, all currency conversions were carried out at par. Some countries, however, where monetary reform was accompanied by the unification of the numerous currencies introduced during the occupation period, established discriminatory conversion rates and conversion limits. The outstanding illustration of such discrimination is provided by the series of currency reform decrees issued in Poland early in 1945, under which the Russian ruble was exchanged in unlimited amounts into new zlotys, but the zloty issued in the German-administered Government General of Poland only up to 500 zlotys.[21] Moreover, Polish holders of German reichsmarks could only obtain 250 zlotys at the rate of 2 reichsmarks to 1 zloty,[22] compared with the 1:2 rate used by the nazi occupation forces.[23] Similarly, in Yugoslavia the conversion rates established at the time of the issue of new dinar currency in April, 1945, discriminated against some of the currencies issued by the German satellites.

Following the currency conversion, the exemptions and unfreezing provisions of monetary reform laws and of their amendments became

[20] This occurred, for instance, in Austria (see *New York Times*, December 5, 1945). In Denmark notes not affected by the conversion were accepted at a 50 per cent premium (*Neue Zürcher Zeitung*, July 27, 1945).

[21] *Basler Nachrichten* (March 22, 1945); small industrial and commercial enterprises were permitted to exchange up to 2,000 zlotys. See also *The Banker*, London, June, 1945.

[22] *Financial Times*, London, March 19, 1945.

[23] "Currency Reform in Eastern Europe," *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, May, 1946.

applicable. In scope and detail, most reform laws, although enacted under analogous conditions and pursuing essentially the same objectives, exhibit little similarity. In many important respects the monetary authorities of each country have actually followed widely divergent precepts and considerations regarding blocking exemptions and the timing and purposes of releases of blocked funds. Most decrees, however, draw a sharp distinction between deposits of individuals and business, permitting the release of funds needed for wage payments and certain other business expenditures which cannot be met from the proceeds of current sales. In Czechoslovakia, for instance, the currency reform decree of October 19, 1945, authorizes employers to withdraw from their blocked bank deposits funds up to the amount of their payrolls for one month. Regulations of a similar nature have been issued in Belgium, in the Netherlands[24] and in Austria.[25] In addition to funds for wage payments, currency reform decrees, or their amendments, sometimes unfreeze funds to be expended for working capital purposes and set up agencies which may unblock funds upon application.

As far as individuals are concerned, those currency reform laws which authorize the release of relatively small amounts usually specify a relatively large number of purposes, mostly of an emergency nature, for which funds may be withdrawn. This was, for instance, done in the Netherlands,[26] and in Austria where persons were permitted to use up their blocked balances in monthly installments if they were unable to seek employment and possessed no other means of support. Such releases reflect the concerted, though not always successful, efforts of the monetary authorities to provide a flexible instrument of control which can be adapted to the special circumstances of the individual owners of bank deposits.

A few currency reform measures, while imposing severe restrictions on cash withdrawals from bank accounts, permit large parts of the blocked balances to be transferred by check or through the giro (bank transfer) system. For instance, the Austrian Currency act of November 30, 1945, which in many respects is one of the most rigid reform decrees on record, authorized transfers from account to account through payment order up to 40 per cent of the balance of the owner as of November 30. In Czechoslovakia, the currency reform law permits the transfer of certain funds from one blocked account to another. Similar arrangements were made during the early stages of the Dutch currency reform. The reason for the comparatively liberal treatment of intra-account payments is the same

[24] "Currency Reform in the Netherlands," *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, January, 1946.

[25] *Staatsgesetzblatt für die Republik Österreich*, December 1, 1945.

[26] "The Netherlands During German Occupation," *The Annals*, May, 1946, p. 37.

as given earlier in reference to the imposition in many currency reform laws of stringent limitations on the issue of new notes, namely, the desire of monetary authorities to channel payments through the banking system so as to be in a position to examine them for their legitimacy.

Under some decrees, the time period in which the original deposit originated is a criterion of major importance for the availability of bank balances. In certain areas of Austria, this is actually the decisive consideration. Apparently in order to reward people who followed the exhortations of the Austrian government to deposit currency hoards and, in order to discriminate against deposits which were made while Austria was part of nazi Germany, comparatively substantial cash withdrawals were permitted from funds banked following the liberation of Austria, but before the announcement of the decree.[27] In Belgium, 10 per cent of the balance as of October 6, 1944, the day on which the Belgian currency reform was launched, or the entire balance standing to the credit of a bank account on May 9, 1940, the day prior to the German invasion of Belgium, whichever was greater, was exempted from blocking.[28]

With the threat of runaway prices removed and as supplies of essentials became more ample and black markets narrowed, the monetary authorities of some countries permitted the unblocking of funds in addition to those released under the rules enumerated above. Norway, for instance, scrapped some of the most essential parts of her blocking program only three months after their adoption for the reason, according to the Norwegian Department of Finance, that under the liberal interpretation of the blocking regulations, the public could get whatever funds it required anyhow.[29] Belgium too has permitted the release of a considerable amount of blocked funds. But most of the liberated nations have relaxed the reins of their blocking controls but little. However, once the liquid funds were brought under control, governments have shown increasing interest in removing these funds permanently from the hands of the public. With the emergence of this process, monetary reform entered upon a new stage.

B. *Fiscal Tools in Monetary Reform Programs*

Instruments of fiscal policy, such as capital and increment levies, and forced loans, have played a vital rôle and, in most cases, have been an

[27] This feature of the Austrian currency reform law applies only to those areas of Austria which early in July, 1945, were under Russian occupation.

[28] "Belgian and French Monetary Policies," *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, October, 1945.

[29] Significantly, the Department of Finance stated at the time that the main purpose of the blocking had been to register all accounts and that no useful purpose would be served by keeping the accounts blocked longer than absolutely necessary, Kaare Petersen, *op. cit.*

integral part of monetary reform program in liberated Europe. Blocking, essentially an emergency device, permitted monetary authorities to immobilize liquid assets quickly, but left the eventual disposition of the blocked funds unresolved. Capital and increment levies, as well as the issue of non-negotiable bonds, have been instrumental in absorbing these funds.

The significance of fiscal measures in monetary reform programs arises from their effects on the flow of expenditures out of current income as distinguished from spending out of existing balances which can be controlled by blocking. Recent discussions on consumption economics have focused attention on the incentive to a high propensity to consume which may result from the huge growth of liquid assets holdings in the United States.[30] Application of these observations to the impact of the fiscal parts of monetary reform programs in Europe suggests that the absorption of blocked balances may be conducive to a somewhat lower propensity to consume than would otherwise be the case, and thus tend to retard inflationary pressures so far as they survive or are generated subsequent to the blocking. Needless to say, the more reliance is placed on taxation than on forced loans, the greater the effect in this respect, unless the loans are not only non-negotiable, but carry distant maturities, *i.e.*, are in almost every respect interest-bearing tax receipts. Mere blocking is unlikely to produce any pronounced effects on the income-expenditure pattern since owners of frozen funds are inclined to hope for their eventual release and to consider them contingently available.

The effects of levies, increment taxes and forced loans, designed to absorb blocked balances, are also determined by what the government does with the proceeds. If the government uses them for a reduction of debt held by the banking system, *i.e.*, retires from the monetary system funds which could not be spent by their former owners anyhow, the aggregate volume of expenditures is obviously not affected.[31] Spending by the government of the proceeds on goods and services is, of course, highly expansionary—no less than the creation of new funds, which, however, in actual practice is usually the sole alternative.

Perhaps the best illustration of a contraction of the money supply through tax-loan operations is afforded by the actions of Belgium's monetary authorities in the later stages of their reform program. At the outset of its execution, all blocked balances were divided into a "tem-

[30] See, for instance, S. Morris Livingston, "Wartime Savings and Postwar Markets," *Survey of Current Business*, September, 1943; James J. O'Leary, "Consumption as a Factor in Postwar Employment," *Am. Econ. Rev.*, Papers and Proceedings, May 1945, p. 38; also Gardiner C. Means in *American Economic Review*, Papers and Proceedings, May 1946, pp. 34–35.

[31] Some minor effects arising from changes in the reserve position of commercial banks and from a reduction or shift of interest payments from the banking system to the public may be disregarded in this context.

porarily unavailable" portion of 40 per cent and a "permanently blocked" portion of 60 per cent. In October, 1945, the latter part of the bank deposits were transferred to an account in the Belgian National Bank in favor of the Belgian treasury which plans to employ these funds for the retirement of its debt to the bank.[32] At the same time, the treasury handed to the owners of these balances government bonds of restricted negotiability which may be employed for the discharge of tax liabilities arising from a series of laws enacted in October, 1945.[33] If one abstracts from its timing and operational details, the Belgium monetary reform program involves in effect a contraction of the money supply through a shift of government debt held by the banking system to public ownership and an extinction of part of this debt through capital levies and extraordinary profit taxes.

A contraction of the money supply along the Belgian lines is planned by the monetary and fiscal authorities of Czechoslovakia, Denmark and the Netherlands. Meanwhile, blocked balances in the latter country have been absorbed by induced rather than forced loans. By closing practically all other outlets for blocked funds, their owners are being induced to purchase 50-year bonds carrying an interest rate of 3 per cent which will become negotiable three years after issue. Blocked balances in the Netherlands have also been released for the purchase of limited amounts of savings certificates.

In several countries blocked balances, as they are absorbed through government borrowing and taxation, have been or are about to be used for ordinary budgetary expenditures, despite earlier plans to employ these funds for redemption of various claims held by central banks. In Norway, for instance, it was the original intention to use the proceeds of a proposed levy for the repayment of advances by the Norges Bank to Germany,[34] but more recent plans call for allocation of these funds to the purchase of capital equipment and other supplies. Similarly, in Finland the proceeds of a forced loan placed in early 1946, which was originally destined to serve for the retirement of government bonds held by Finlands Bank, are apparently employed to cover the current budget deficit.

Finland's forced loan, which, unlike those of other countries, was not accompanied or preceded by any blocking, deserves some further attention because of the unusual technique employed in its placement.

[32] Banque Nationale de Belgique, *Bulletin d'Information et de Documentation*, October, 1945.

[33] These laws include a capital levy of 5 per cent on all property held in October, 1944, and special taxes on profits derived from trading with the enemy and on excessive income and profits made during the war whether or not resulting from trading with the enemy. See Mitchell B. Carroll, "Outline of War Profit Taxes and Capital Levies in Liberated European Countries," *Tax Law Review*, April–May, 1946.

[34] *Neue Zürcher Zeitung*, September 29, 1945.

Under a decree issued by the government at the end of December, 1945, all notes in denominations of over 100 finmark lost one-half of their legal tender quality.[35] These notes had to be cut into two, the left half serving as legal tender at one-half the value of the original note until exchanged into new notes. The right half was converted into a non-negotiable 2 per cent government bond to be redeemed by 1949. The decree did not affect bank balances at all. Note circulation figures indicate that a measure of this type was anticipated so that hoarders of large-denomination notes were able to escape the loan through placing them in bank accounts. Moreover, the measure has inflicted hardship on holders of a few large-denomination notes, particularly in sparsely-settled regions without adequate banking facilities, who were deprived of one-half of their small currency supply. These and other aspects of the conversion have evoked considerable criticism in Finland and are about to be corrected by supplementary measures.

There remain to be briefly reviewed two drastic measures of more than ordinary interest to the analyst of monetary reform. The first is Yugoslavia's capital levy imposed in the spring of 1945 following the blocking of bank deposits and the withdrawal of currencies introduced during the occupation period.[36] This highly progressive levy was laid solely on monetary wealth, disregarding all other forms of property. Different tax schedules applied to various classes of holders, giving the measure a socio-economic orientation of great significance. Coöperatives and certain public organizations were entirely exempted and "productive enterprises" and farmers favored by relatively low rates.

A different kind of capital levy on monetary wealth was imposed late in December, 1945, by the Hungarian government in a desperate but futile effort to arrest the process of hyper-inflation, then in its early stages. Under a decree issued in December, 1945, all notes in denominations of 1,000 pengos and over had to have adhesive stamps affixed to retain their legal tender quality at face value. Since the stamps were sold by the government at three times the face value of the notes, the measure constituted a straight 75 per cent tax on holders of cash—a burden which made little difference in a country where price increases constantly reduced the real value of currency holdings. The decree failed entirely to retard inflation and did not give the government even a breathing spell during which to interrupt the work of the printing presses.[37] No simultaneous attack was made on the basic causes of

[35] Bank of Finland, *Monthly Review*, January–March, 1946.

[36] "Currency Reform in Eastern Europe," *op. cit.*

[37] For a full description of the execution of the scheme, see *Svenska Dagbladet*, Stockholm, February 13, 1946; also Klopstock, "Monetary Reconstruction in Continental Europe," *op. cit.*

inflation in Hungary nor any attention paid to psychological intangibles which in the past have helped to bring hyper-inflation to an end. Owing to leaks concerning its impending issue, the measure actually induced a more than threefold price increase by sellers of goods who attempted to protect themselves against loss on their currency receipts. Prices since then have risen by leaps and bounds and monetary stabilization must await the execution of a comprehensive economic reform program which is now being prepared by the Hungarian government.[38]

IV. *Tentative Appraisal and Conclusion*

Monetary policy in an over-liquid world, immune to the established instruments of monetary control, is less capable than ever to perform its traditional functions effectively. But monetary authorities in many parts of the world are striking out boldly for new ways and means of regaining some measure of control over money and credit conditions. While in this country the most widely discussed proposals for innovations in the central banking mechanism, such as the Certificate Reserve Plan, have been primarily concerned with preventing further monetization of the public debt, most governments of liberated Europe, confronted with inflationary threats that called for immediate action, have gone straight to the roots of the problem and have adopted elaborate monetary measures involving direct controls over the utilization of the existing money stock.[39]

An attempt to evaluate the effectiveness of these schemes at this early stage of their evolution is handicapped by the absence or unavailability of authoritative and detailed studies prepared in the countries concerned. Generalizations on the monetary and financial repercussions of these measures are dangerous in view of their great divergence in latitude and character. Little can be said on the fiscal parts of the programs because in several countries neither their scope nor the allocation of the proceeds of loans and levies has as yet been determined. While it is thus too early to pass final judgment on the performance of monetary reform in liberated Europe, certain tentative conclusions may be drawn at this point from the monetary experience of a few of the countries under review.

The contractionist and preventative effects of monetary reform pro-

[38] This program was put into operation on August 1, but too late to be considered in this paper.

[39] Mention should be made at this point of recommendations for applying similar measures in the United States. Irving Fisher in a letter to the *New York Times* of April 30, 1946, seriously suggested that a certain percentage of the demand deposits in the member banks of the Federal Reserve System be frozen until further notice and the blocked portion be converted into interest-bearing and marketable securities. A proposal for a currency exchange to sterilize black market money was made in the *Magazine of Wall Street*, of May 25, 1946.

grams appear to have been considerable, at least in their early phases. Available evidence suggests that blocking, particularly in those countries where it was applied with great severity as in Belgium, the Netherlands and in Eastern Europe, has been instrumental in reducing inflationary pressures appreciably. This is indicated by the severe decline in black market trading immediately following the adoption of the reform decrees.[40] An outstanding exception is Belgium, where black market prices after a brief interlude rose again, but this phenomenon was largely due to the deterioration of the supply situation resulting from the delay in the eviction of the German army. The temporary resurgence of black markets during the early stages of the Belgian monetary reform program does not mean that it failed in its purpose. There is little doubt that the Belgian scheme, which was the forerunner of all other monetary reform measures in liberated Europe and probably the inspiration to some, was an anti-inflationary tool of great potency and has substantially contributed to the relatively rapid pace of Belgian reconstruction during 1945. Monetary reform programs have also exerted a wholesome influence by dispelling the "holiday" atmosphere which was noticeable in many European countries after liberation, as people were living on their money hoards. Moreover, by increasing the dependence of business on bank credit, blocking has served to enlarge the scope of monetary and credit policy.

Currency conversion, as well as the registration of bank deposits and other assets which in several cases has been part of the reform programs, have been useful in the preparation of capital levies and have forced collaborationists and blackmarketeers to reveal their ill-gotten gains. But expectations on the part of treasuries of large profits because of nonsurrender of notes held by tax evaders or the enemy, have proved illusory in several countries.[41]

The fact should not be lost sight of, however, that these schemes have, at times, given rise to considerable economic disturbances. The authors of the blocking programs have not always judged accurately the transaction requirements of the public whose money holdings are frequently maldistributed and whose money needs may vary widely.[42] Even if mitigated by numerous exemptions from the freezing controls and subsequent releases, the indiscriminate blocking of large portions of the

[40] This was particularly apparent in the Netherlands. See *Quarterly Review*, Amsterdamsche Bank, January, 1946.

[41] This applies particularly to Norway, Finland and Denmark. See *Neue Zürcher Zeitung*, April 1, 1946.

[42] For a severe, though not particularly judicious, criticism of the deflationary effects of the Belgian scheme, see Fernand Baudhuin, "Après Six Mois de Libération," *L'Echo de la Bourse*, March 20 and 21, 1945. As to financial disturbances in Austria due to the monetary reform, see *New York Times*, February 1, 1946.

money supply remains basically a very crude and inflexible device, the use of which can be supported only under the extraordinary conditions of the early post-war period.

There is also considerable evidence that the contractionist and preventative forces of monetary reform programs wore off rather rapidly as the expansionary influences of reconstruction finance became ascendant. Throughout liberated Europe the depletion, destruction and dismantlement of capital equipment during the occupation period has forced governments and private business to program huge capital outlays for reconstruction. These programs are being carried out while specific shortages of various sorts prevent full utilization of economic resources. With production in most countries of liberated Europe rising very slowly, large investment expenditures tend to push aggregate demand to a level in excess of output plus net imports so that new inflationary pressures are generated. In some countries, moreover, the restrictive effects of the reform decrees were impaired by large currency issues to cover the needs of the Allied armies. This was the case in Belgium in the winter of 1944–45 and in Austria in 1946.

Comprehensive statistics on the aggregate money supply and its blocked portion are unfortunately not available for most countries under discussion, but it is possible to present figures for notes in circulation which reveal the rapidity of the resumption of currency expansion despite the restrictions on withdrawals from bank deposits. While the sharp rise in currency circulation partly reflects normal cash needs at the prevailing level of prices and wages, there is evidence that the desire for holding relatively large precautionary and speculative cash balances, a habit carried over from the wartime period, was a factor in the currency expansion.

NOTE CIRCULATION

(Month-end figures in billions of currency units)

	Netherlands (guilders)	Belgium (francs)	Norway (crowns)	Denmark (crowns)	Czechoslovakia (crowns)
December, 1939	1.1	28.0	.6	.6	7.7
April, 1945 (Pre-liberation level)	5.5	100.8[a]	3.0	1.7	51.2
Level after Withdrawal	1.3 (X .45)	28.5 (X .44)	1.0 (IX .45)	.9 (VII .45)	23.0 (XI .45)
May, 1946	2.2	72.5	1.6	1.5	32.0

[a] August, 1944.

The appearance of considerable amounts of currency hoards as well as the rapid growth of free balances in the wake of monetary reform

measures illustrate the fact that they can do very little to allay the expansionary forces of reconstruction finance. Their adoption has, in some cases, persuaded the public that the government is determined to pursue a counter-inflationary policy and has thus discouraged spending out of current earnings to the extent that it was motivated by the anticipation of price increases.[43] Certain restraints on spending have probably resulted from the reduction of liquid asset holdings. Except in these two respects, the monetary measures taken in liberated Europe have been of little relevance to the volume of expenditures out of current income. Once imposed to deal with the inflationary pressures growing out of the occupation period, blocking cannot be repeated to cope with similar pressures arising during the reconstruction period. Unless assured and convinced that current earnings remain freely available, the public will tend to keep shy of bank deposits or to increase spending in order to evade the effects of a new blocking program. Such tactics cannot be countered by a renewed withdrawal of currency holdings, for a repetition of the currency conversion is hardly feasible considering the administrative problems and the monetary disturbances associated with its execution. For essentially similar reasons, it is ordinarily not possible, though monetary conditions may warrant it, to reverse the unblocking process and reimpose freezing controls over funds which had been released but have not yet been spent. The area of sovereignty of the blocking procedure is narrowed as the availability of money through releases from freezing controls is enlarged.

The lessons of the monetary experiments of 1944–45 will undoubtedly be examined carefully by the governments of those countries in Europe which until now have done nothing or too little to prevent a runaway price inflation. The financial maladies of Rumania and Greece have reached a point where they are no longer amenable to monetary surgery of the kind employed elsewhere in Europe. Price and exchange control, never very effective in these countries, has broken down and monetary inflation has been fully reflected in price inflation. This, however, is not the case in Germany, and it is here that the experiences with post-war monetary schemes can be most fruitfully applied if agreement on the issue of monetary and financial reconstruction in Germany can be reached in the Allied Control Council. While the story of monetary reform in post-war Europe has by no means come to an end, it remains nevertheless true that the large measure of success achieved by the liberated countries in their fight against inflation is one of the most encouraging features of economic rehabilitation in Europe.

[43] This was even the case in Norway, despite the mildness of the monetary measures taken in that country. See Petersen, *op. cit.*

INTERNATIONAL ASPECTS OF AMERICAN AGRICULTURAL POLICY

By MARGARET S. GORDON*

Introduction

For a decade or more, a serious conflict has been developing in this country between the over-all objectives of our commercial policy and the measures which have been applied to our agricultural foreign trade. While we have been seeking to bring about a lowering of world trade barriers, our domestic agricultural program, with its price supports and production controls, has forced us to employ nationalistic measures in relation to our agricultural exports and imports. It has resulted, moreover, in a serious loss of export markets and the accumulation of enormous stocks in the hands of the Commodity Credit Corporation. In the case of two of our leading exports, wheat and cotton, we have been rather ineffectively attempting to cling to a diminished share in the world market by employing export subsidies.[1]

To escape from this unfortunate dilemma, the Department of Agriculture proposes a post-war policy of intergovernmental commodity agreements to stabilize world agricultural prices and curb unmanageable surpluses. Undoubtedly there will be a real need for international collaboration to handle certain post-war commodity surplus problems, but it may be seriously questioned whether commodity agreements negotiated largely with a view to protecting the price-support schemes currently in vogue in agricultural-exporting countries are likely to conform to the standards which the more cautious advocates of intergovernmental commodity arrangements would like to see enforced.[2]

It is the purpose of this article to analyze recent trends in our agricultural foreign trade policy and to raise the question as to whether a drastic change in our agricultural price policies is not long overdue. In the course of the discussion, we shall go over some ground that is familiar

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[1] These statements do not, of course, apply with complete accuracy to the situation which developed during the war, but rather to the trends which were apparent before the war and which are likely to reappear.

[2] This is not to deny that a strong general case can be made for international measures to curb agricultural price instability. (See discussion of commodity agreements, pp. 603–9, below.) For a good defense of the Department of Agriculture's position, see Robert B. Schwenger, "World Agricultural Policies and the Expansion of Trade," *Jour. Farm Econ.*, Vol. XXVII (1945), pp. 67–87.

to most economists, but this will be necessary in order to relate recent developments to long-run trends in our agricultural foreign trade and commercial policy.

Through the decisive votes in Congress in favor of the United Nations Charter, the Bretton Woods Agreements, the Food and Agriculture Organization, and ratification of the British loan, this country has firmly expressed its intention to participate in a program of world economic and political coöperation. A nationalistic agricultural policy could seriously interfere with the success of this program. If artificial supports for American agricultural prices are continued into the indefinite future, the harmful effects will not be confined to our foreign trade in agricultural products alone. High agricultural prices will tend to raise costs throughout American industry, thus hampering our entire export trade. Import barriers imposed to protect artificially high agricultural prices will injure American trade with predominantly agricultural countries and with other countries as well. Finally, and most serious, the entire movement to lower world trade barriers will suffer if this country adheres to the use of high tariffs, import quotas, and export subsidies in connection with its agricultural program.

Recent Trends in U. S. Agricultural Foreign Trade

The United States long since ceased to be a net exporter of agricultural products. Agricultural imports have tended to exceed agricultural exports since the middle 1920's, and agricultural exports have represented a steadily declining proportion of total exports for decades, as Table I indicates. There has been no persistent tendency for agricultural imports to increase faster than total imports, however. Imports of cer-

TABLE I—AVERAGE ANNUAL U. S. EXPORTS AND IMPORTS OF AGRICULTURAL PRODUCTS, 1900–1939

Period	Exports of Agricultural Products		Imports of Agricultural Products	
	In millions of dollars	As percentage of total exports	In millions of dollars	As percentage of total exports
1900–1904	873	61	488	50
1905–1909	963	55	667	50
1910–1914	1,157	50	909	53
1915–1919	2,638	41	2,019	63
1920–1924	2,093	46	1,888	54
1925–1929	1,792	37	2,216	53
1930–1934	767	37	877	50
1935–1939	762	26	1,214	51

Source: U. S. Department of Agriculture, *Agricultural Statistics*, 1941, pp. 481–82. Averages calculated by the writer.

tain tropical products which could not be produced in this country (*e.g.*, natural rubber and coffee) have always been high. Imports of the more competitive items might have increased somewhat faster but for the restraining effect of tariffs and other restrictions. During the drought years of the middle thirties, this country imported substantial amounts of certain commodities which were normally on an export basis. There is little doubt that the volume of agricultural imports would have been even higher in these years in the absence of tariffs.[3]

In spite of the technological improvements which continue to take place in American agriculture, the long-run tendency is almost certainly toward a greater dependence on imports. As population grows and the standard of living rises, domestic consumption of an increasing number of commodities will come to exceed domestic production. Price relationships, also, will tend more and more to favor imports, since increasing industrialization inevitably brings with it some loss in a nation's comparative advantage as an agricultural producer, even in the case of a country as richly endowed with land and other natural resources as the United States.[4]

One of the most crucial questions facing this country at the present time is whether the trend toward greater dependence on agricultural imports will continue to be resisted, as it was during the 1930's. Most European countries faced this type of situation during the nineteenth century and met the problem in a variety of ways. England, of course, is the leading example of a country which adopted a free trade policy, permitting her industrial exports to enjoy their maximum competitive advantage in international trade, while her workers were fed on low-priced imports from overseas.[5] Germany, along with a number of other countries in continental Europe, adopted the opposite course of protecting her farmers, especially her wheat-growers, from the competition of cheap grain imports from overseas.[6]

A continuation of the present trend toward a planned and regimented agricultural system in the United States will raise fundamental political questions bearing on the relation of the state to the individual producer.

[3] Butter imports, for example, were high in the first five months of 1935 but ceased altogether in June of that year because the margin between prices in London and New York had fallen to 10 cents, or four cents less than the duty. (*Cf. The New York Times*, June 19, 1935.)

[4] As manufacturing and distributive trades expand their activities, the prices of labor and other productive factors are bid up to the point at which farmers find it difficult to compete with agricultural producers in less well-developed countries.

[5] Belgium, Holland, and for many years, Switzerland, followed a course similar to that of the British. (*Cf.* J. B. Condliffe, "The Disposal of Agricultural Surpluses," *Jour. Farm Econ.*, Vol. XXIV [1942], p. 439.)

[6] For an interesting study of this whole question and the way in which agricultural protectionism was used to support the power of the Junker class, see A. Gerschenkron, *Bread and Democracy in Germany* (Berkeley, California, 1943).

In addition, this country's rôle in world trade and in a program for international economic coöperation will be profoundly affected by decisions reached in the field of agricultural foreign trade policy. The end of the war provides a unique opportunity for a drastic change in our agricultural program, since substantial readjustments will in any case be required during the transition period. Once the pattern of post-war agricultural production is established, changes will be far more difficult to accomplish.

Maximum development of our industrial potentialities can be achieved only through access to expanding world markets, and our undisputed industrial and financial supremacy places this country in a unique position to assume leadership in the movement for lower world trade barriers.[7] Fortunately there are indications that many American industrial leaders are beginning to recognize the need for lower tariffs, and it begins to look as if our agricultural policies may provide the greatest obstacle to a general liberalization of our import barriers.

It is natural for the farmer to regard increasing imports as a threat to his position as an agricultural producer, but this country, unlike Britain, is not likely to become dependent on imports for a major proportion of its food supplies. Larger imports would undoubtedly call for contraction in the production of certain commodities, but the outlook in any case is for continued contraction of the proportion of the population engaged in agriculture because of technological improvements and other factors.[8] The pattern of agricultural production, moreover, is certain to change. American farmers will find it to their advantage to concentrate more heavily on the production of foods which a prosperous industrial population needs to obtain chiefly from domestic sources—dairy and poultry products, certain types of meats, and fruits and vegetables. Shifts in these directions are taking place in any case, but the continuance of artificial price-supports for grains and other surplus crops will hamper the process and prevent dairy, poultry, and livestock producers from obtaining feed grains at lower cost. Similarly, artificially high prices for cotton and wool hamper American manufacturers of cotton and woolen goods in competing with foreign producers and with the rayon industry.

Although the American farmer is gradually becoming less dependent on export outlets for his chief crops, it by no means follows that he does not have an important stake in international trade. Full employment in

[7] *Cf.* U. S. House of Representatives, Sixth Report of the House Special Committee on Post-War Economic Policy and Planning, *The Post-War Foreign Economic Policy of the United States*, House Rept. No. 541, 79th Cong., 1st sess. (Washington, 1945), esp. pp. 8–12.

[8] *Cf.* T. W. Schultz, "Food and Agriculture in a Developing Economy," in T. W. Schultz, ed., *Food for the World* (Chicago, 1945), esp. pp. 316–19.

this country could mean a domestic market large enough to absorb a very substantial proportion of our agricultural output, except for a few leading export items. But full employment can scarcely be achieved in the absence of expanding international trade, whatever measures are adopted to support the post-war domestic economy.[9] In the long run, the farmer stands to gain most from policies which encourage expansion of his market both at home and abroad, even though this means lower agricultural prices and larger imports of certain farm products.

Tariffs, Quotas, and Subsidies

Agricultural protectionism in the United States is not a recent phenomenon. It dates back to the latter part of the nineteenth century, when successive tariff acts "benefited" the farmer by erecting tariffs on his products to "compensate" for the high tariffs which his industrial brethren were demanding on manufactured products. The Tariff Act of 1930 raised agricultural duties to new high levels. For the most part, these duties were meaningless at the time of their adoption, but after the Agricultural Adjustment Program came into effect, many of the agricultural rates in the tariff schedule took on a new significance. For the Program had the effect of raising American agricultural prices above world prices, thereby creating an artificial price level which could not have been maintained without protection against imports. In a few cases in which tariffs could not be relied on to keep out imports, quotas were introduced.[10]

To what extent has this wall of protection been modified by the Reciprocal Trade Agreements Program? The number of tariff reductions on agricultural products has been impressively large, covering the great majority of agricultural tariff items.[11] In a very substantial number of cases, moreover, the maximum 50 per cent reduction permitted under the original Trade Agreements act has been granted. Some of the reductions have been of considerable significance, *e.g.*, those on canned beef, certain grades of wool, and long-staple cotton. Many of the concessions, however, have applied to the less competitive items, and in a considerable number of cases, reductions on the more competitive items have

[9] The converse is also true, of course. International trade cannot be expected to prosper unless this country pursues with reasonable success a policy aimed at full employment.

[10] Quotas were imposed on imports of wheat and wheat flour, for example, in 1941, when the price of July wheat rose to a point at which it became profitable to import Canadian wheat over the tariff. (*Cf. The New York Times*, May 29, 1941.) They remained in effect until 1943, when they were suspended because of wartime conditions. (U. S. Department of State, *Bulletin*, Vol. VIII [1943], p. 386.)

[11] See U. S. Tariff Commission, *Changes in Import Duties since 1930*, rev. ed. (Washington, 1943) and Supplement (Washington, 1944).

been made applicable only to a specified quota of imports.[12] Tariff classifications have frequently been narrowed, moreover, to protect the American farmer at his more vulnerable points.

Tariff rates remain high on a number of leading American agricultural products. Among the more significant rates which have not been affected by the Trade Agreements Program are those on wheat (42 cents a bushel), butter (14 cents a pound), fresh beef (6 cents a pound), and the many important grades of wool not affected by the Argentine agreement.[13] As long as present agricultural price policies remain in effect, there is little likelihood that these higher tariffs on agricultural products will be reduced. There is a strong probability, moreover, that some of the import quotas which were suspended during the war will be restored.

In this connection, certain paragraphs in the State Department's recently published *Proposals for Expansion of World Trade and Employment* are highly significant. These proposals, which are intended to serve as a basis for an international trade conference to be held in the near future, outline the commitments which, in the view of the United States government, members of a proposed international trade organization should be asked to make. Import quotas would be outlawed as an instrument of commercial policy. Certain exceptions, however, would be permitted, including the use of import quotas on agricultural products in conjunction with (a) governmental marketing or production restrictions or (b) the distribution of surplus commodities to lower-income groups free of charge or at prices below the market.[14] This exception, which was undoubtedly included at the request of the Department of Agriculture, represents no real change in American government policy, since a similar provision was included in all the Reciprocal Trade Agreements. It merely recognizes the probability that current agricultural price policies, or something very like them, will be continued into the indefinite future.

The resort to export subsidies has also been closely related to the policy of supporting domestic agricultural prices, in this country as well as in a number of other countries. The United States government started

[12] Such cases include cattle weighing less than 175 pounds and 700 pounds or more (other than dairy cattle), whole milk (fresh or sour), cream (fresh or sour), certain types of fresh or frozen fish, white potatoes, Cuban filler tobacco, and certain molasses and sugar syrups (other than Cuban).

[13] On the better grades of clothing wool, the rate is 34 cents per pound clean content. Duties remain high, also, on sugar, certain imported grades of tobacco, and a number of other agricultural products. As a result of the wartime rise in prices, however, rates on the products mentioned, all of which are fixed in specific terms, are considerably lower when expressed in *ad valorem* terms than before the war.

[14] U. S. Department of State, *Proposals for Expansion of World Trade and Employment* (Washington, 1945), pp. 13–14. The proposals were accepted by the British in all important respects in conjunction with the recent loan agreement.

subsidizing exports of wheat and wheat flour in 1938.[15] A cotton export subsidy program followed in 1939. In both cases, the subsidies were intended to permit exporters to purchase at domestic prices and sell abroad at the lower world market prices.[16] Wartime conditions led to the suspension of the cotton program in 1942 and of the wheat program in 1943.[17]

But reintroduction of export subsidies did not await the end of the war. Under the provisions of the Surplus Property act, approved October 3, 1944, the Commodity Credit Corporation may sell surplus farm commodities for export at competitive world prices, even though the legal minimum price for comparable domestic sales is substantially higher.[18] Export subsidy programs were promptly inaugurated for wheat, wheat flour, and cotton, although in January, 1945, the subsidy on wheat was withdrawn.[19]

There is every indication that the use of export subsidies may be continued, and perhaps extended to additional commodities, when the expected post-war slump in world agricultural prices gets under way. Here again, the State Department's proposals on post-war commercial policy include a significant loophole. They provide that, within three years of the establishment of the proposed international trade organization, the use of export subsidies by members of the organization is to cease. If, however, a burdensome world surplus develops (or threatens to develop) in the case of a given commodity, and attempts to solve the problem through intergovernmental action fail, members may resort to export subsidies.[20]

There is no doubt that the employment of export subsidies by the United States government has had a disturbing effect on our international commercial relations.[21] Such a policy, moreover, encourages similar action by other countries at the very time when the United

[15] A more limited subsidy program, applying to exports of wheat and flour from the Pacific Northwest, made its first appearance in 1933.

[16] In the case of wheat and wheat flour, the exporter was to apply to the federal government for compensation to cover his actual loss. In the case of cotton, the amount of the subsidy was fixed. The average subsidy on wheat in the 1938–39 season amounted to 28.7 cents a bushel. (*Cf. The New York Times*, August 22, 1939.)

[17] *Ibid.*, July 22, 1942; and *Foreign Commerce Weekly*, July 27, 1943, p. 23.

[18] Public Law No. 457, 78th Cong., Sec. 21 (c).

[19] In November, 1945, the subsidy amounted to 4 cents a pound on cotton and to 18 cents a hundred pounds on wheat flour. (*The New York Times*, November 24, 1945.)

[20] No member may employ such subsidies, however, in such a way as to enlarge its share of the world market. (U. S. Department of State, *Proposals for Expansion of World Trade and Employment*, p. 16.)

[21] See, for example, the address of Mr. Dean Acheson (now Under-Secretary of State) at the cotton conference arranged by the Subcommittee of the House of Representatives for the Study of Policies of Post-War Agriculture. (U. S. Department of State, *Bulletin*, Vol. XI [1944], pp. 700–1.)

States is trying to exert its influence toward a restoration of liberal trade policies.[22]

Intergovernmental Commodity Agreements to Stabilize Agricultural Prices

1. *Current Proposals.* It is not our purpose to enter into a general discussion as to the merits of intergovernmental commodity agreements. We shall be concerned only with the rôle which such arrangements can be expected to play in stabilizing world agricultural prices. Most recent proposals for handling the problem of post-war surpluses in the agricultural field center around the use of such schemes and the need for international machinery to prevent their abuse.

It is widely recognized that supply and demand conditions for many basic agricultural staples are such as to create a special need for intergovernmental action to deal with burdensome surpluses. Although production tends to expand rapidly in response to price increases, its response to price declines is sluggish and sometimes perverse. In addition, the demand for commodities of this type is in most cases relatively inelastic. Hence arises the familiar phenomenon of abnormally low agricultural prices and large surpluses which is so characteristic of periods of severe depression. The problem is the more serious because of an apparent long-run tendency for the supply of agricultural products to increase more rapidly than the demand.[23] Thus there has been a pronounced tendency for governments to step in to protect the distressed producers, frequently through measures to support prices. These attempts have generally been unilateral, and their net effect on international trade has been highly restrictive. The case for coördinated intergovernmental intervention is therefore strong.

The emphasis in all recent proposals relating to intergovernmental commodity arrangements has been on getting away from the restrictive type of agreement which has been prevalent in the past. The recommendations which came out of the Hot Springs Conference, and which led to the formation of the United Nations Food and Agricultural Organization, stressed the importance of expanding agricultural production to meet the world's nutritional needs. This point of view dominated

[22] It may be argued, of course, that if the domestic price of a commodity is held above the world price through governmental price-supports, an export subsidy which merely compensates for this price-differential will not have a disturbing influence on the world market. This is not necessarily true. The relatively high domestic price will tend to stimulate domestic production and to discourage domestic consumption, so that the volume of exports may be larger than it would have been in the absence of intervention. Production restrictions will not necessarily interfere with this result. For a more extended discussion of this problem, see M. S. Gordon, *Barriers to World Trade* (New York, 1941), pp. 323–24.

[23] *Cf.* T. W. Schultz, "Food and Agriculture in a Developing Economy," in Schultz, ed., *op. cit.*, p. 307.

the Conference's conclusions on intergovernmental commodity arrangements, which, it was stated, should be "designed so as to promote the expansion of an orderly world economy."[24] Although no specific recommendation was made with respect to buffer stocks schemes, much of the discussion at the Conference centered around the proposal of the British delegation for the establishment of an international buffer stocks agency, which would purchase stocks during periods of declining prices and gradually liquidate them as prices revived in an attempt to counteract price fluctuations.[25]

The official position of the United States government on commodity agreements was given definite formulation with the publication of the State Department's *Proposals for Expansion of World Trade and Employment.*[26] The tone of the statement in relation to commodity agreements is extremely cautious. It is proposed that special intergovernmental commodity studies should be sponsored by the international trade organization, and that every effort should be made to correct maladjustments through the operation of market forces and particularly through exploring every possible method of stimulating consumption. Curtailment of production and trade through commodity agreements should be undertaken only if the situation requires drastic measures. Such agreements, moreover, should be regarded as transitional in nature and should provide for the correction of particular maladjustments through a program designed to promote shifts of resources and manpower out of over-expanded industries.[27]

Somewhat different is the impression one gets from a recent Department of Agriculture publication on post-war foreign trade problems in the agricultural field.[28] While stressing the need for coördinated programs

[24] United Nations Conference on Food and Agriculture, *Final Act*, U. S. Department of State, *Bulletin*, Vol. VIII (1943), pp. 566–67. It was further recommended that a body of broad principles should be agreed upon, to assure (a) the representation of consumers as well as producers, (b) increasing opportunities for the supplying of consumption needs from the most efficient sources of production at prices fair to both consumers and producers, (c) the maintenance of adequate reserves, and (d) provision for the orderly disposal of surpluses.

[25] The original British proposal rejected the use of trade or production restrictions in conjunction with the buffer stocks scheme, but in later discussions the American view that price stabilization could not be successfully achieved in the absence of such controls apparently prevailed. (*Cf.* Edward S. Mason, "The Future of Commodity Arrangements," in T. W. Schultz, ed., *op. cit.*, p. 244.)

[26] *Cf.* above. For an earlier statement by Bernard F. Haley in an address before the Academy of Political Science, see U. S. Department of State, *Press Release*, April 3, 1945, No. 289.

[27] *Cf.* U. S. Department of State, *Proposals for Expansion of World Trade and Employment*, pp. 20–21. Specifically, it is proposed that commodity agreements shall be effective for no more than five years, and shall not be renewable unless a review of the entire situation demonstrates a real need for their continuation and unless substantial progress has been made toward correction of the underlying maladjustments.

[28] U. S. Department of Agriculture, Interbureau Committee on Post-War Programs, *A Post-War Foreign Trade Program for U. S. Agriculture* (Washington, 1945), esp. pp. 19–22. The

to expand consumption and to achieve shifts in production along the lines of comparative advantage, this set of proposals seems to go rather far in the direction of a planned world agricultural system. Under the type of commodity agreement contemplated, extreme fluctuations in prices on the world market would be prevented through export controls and the establishment of upper and lower price limits which would be modified from year to year to conform with basic changes in demand and supply conditions. Buffer stocks would be maintained by the various national governments and possibly by an international agency as well. These stocks would be reduced or replenished to counteract price fluctuations but would not be permitted to fall below certain minimum levels. Production adjustments, brought about through appropriate production controls enforced by national governments, would be relied on to keep prices and stocks at the required levels. The plan apparently contemplates an extension of the "ever-normal granary" idea to the international arena. While there is nothing new or radical about these proposals,[29] one cannot escape the conclusion that a permanent system of control, rather than a mechanism for dealing with purely temporary maladjustments, is intended.

Whether the cautious attitude of the State Department will come to dominate the policies of the proposed international trade organization remains to be seen. During the first meeting of the United Nations Food and Agriculture Organization in October, 1945, it was apparent that many of the delegates, particularly from the large agricultural-exporting countries, favored the immediate establishment of an international agency, modeled after the Commodity Credit Corporation, to control the movement of agricultural products in world trade.[30] The debate on this proposal revealed sharp differences of opinion among the various delegations, and no positive action was taken. But in August, 1946, the Organization made public, as a basis for further discussion, the so-called "Orr Plan," under which a world food board would carry on buffer stock operations, with special provisions for disposal of surplus foods to needy nations.[31]

2. *Commodity Agreements and Parity Price Formulas.* Whatever the precise rôle of commodity agreements, there arises a most serious question as to how the parity price structure in the United States is to be

views outlined in this publication do not, of course, represent official U. S. government policy and are significant only in so far as they suggest the trend of thinking within the Department of Agriculture.

[29] They resemble closely the provisions of the Draft Convention for an International Wheat Agreement. *Cf.* p. 606, below.

[30] *Cf. The New York Times,* October 21, 23, 24, and 25, 1945.

[31] *Cf. The New York Times,* August 9, 1946. It was reported that President Truman's cabinet reacted unfavorably to the proposal.

reconciled with an international scheme of commodity price stabilization. As we have seen, the effect of our domestic agricultural policy has been to maintain American agricultural prices well above world prices. The system of parity prices, moreover, is based on a historical formula which bears no relation to competitive conditions in world markets. Under existing legislation, price floors for a substantial list of agricultural commodities are to be held at 90 per cent of parity until the end of a two-year period dating from the first of January immediately following the official end of hostilities.[32] Thus there is no prospect, short of repeal of this legislation, of any basic change in agricultural price policies before the end of 1948.

If artificial price differentials created by government control measures in major supplying countries are not eliminated, international commodity agreements can have but limited usefulness in stabilizing world agricultural prices. This difficulty can be concretely illustrated in connection with the International Wheat Agreement, the price provisions of which have not at this writing come into effect. The wheat agreement provides for "a basic minimum price and a basic maximum price of wheat, c.i.f. United Kingdom ports, and schedules of prices, c.i.f. and or f.o.b., equivalent thereto for the various wheats sold in world markets," these prices to be determined by the International Wheat Council.[33] As Dr. Davis has pointed out, wheat prices in the four major exporting countries have been so divergent that a wide range between maximum and minimum prices would undoubtedly have to be maintained.[34] This would probably mean that each exporting country would continue to determine its own price and subsidize, if necessary, to move its wheat into the world market. If and when all the provisions of the wheat agreement come into effect, subsidies may serve the purpose of permitting countries with relatively high prices to fill their export quotas, but will not, of course, enable them to compete for a larger share of the market.

It is difficult to see how a similar situation can be avoided in the case of cotton, if price controls are set up in the international cotton agreement now under consideration. The reintroduction of a United States export subsidy scheme has precipitated a general demand on the part of the major exporting countries for an agreement to stabilize exports. The fourth meeting of the International Cotton Advisory Committee,

[32] Public Law No. 729, enacted October 2, 1942. The date of the official end of hostilities must be determined by presidential proclamation or by concurrent resolution of both Houses of Congress.

[33] U. S. Department of Agriculture, Office of Foreign Agricultural Relations, *The International Wheat Agreement* (Washington, 1942), p. 9.

[34] J. S. Davis, *Wheat under International Agreement*, National Economic Problems, No. 410 (New York, Am. Enterprise Assoc., 1945), pp. 10–11.

held in Washington in April, 1945, recommended that a study group be appointed to prepare definite proposals for international collaboration to deal with the world surplus of cotton. It was agreed that an effective arrangement would require regulation of one or more of the following—exports, export prices, and production.[35] So long as existing price floors are maintained in this country, however, the differentials between the American price and prices of comparable grades of cotton in the other major exporting countries will undoubtedly have to be preserved, and the need for an American export subsidy will continue. It is significant that as yet no agreement has been announced.

The problem created by American parity prices, of course, is merely part of a much broader problem arising out of agricultural price controls existing in both exporting and importing countries. During the 1930's, prices in the major continental European importing countries were held far above world prices through price-fixing measures buttressed by rigid import restrictions. Such imports as did come in were to a considerable extent purchased from the smaller European agricultural-exporting countries under strictly controlled bilateral clearing arrangements or other similar devices. Thus the world market was narrowly restricted, and the impact of fluctuations in world supplies fell heavily on the major overseas agricultural-exporting countries, which in turn resorted to price supports and in some cases to export subsidies. If this type of situation should prevail in the post-war world, any attempt to stabilize international agricultural prices would operate under a severe handicap. It would be virtually impossible, moreover, to achieve the shifts in production which are so urgently needed from the point of view both of nutritional needs and of a more efficient utilization of productive resources.

3. *Other Problems Connected with Commodity Agreements.* The proposals for post-war international commodity agreements all emphasize the importance of representation of the consumer point of view in the negotiation and administration of such agreements. It is hoped that this will help to ensure against the restrictive and monopolistic tendencies which have been characteristic of many past agreements. Protection of the consumer interest can be achieved in part through the selection of men of broad judgment as members of the commodity commission, which will be one of the organs of the proposed international trade organization. As a further safeguard, the State Department proposes that in any such arrangements importing countries be given a voice equal to that of exporting countries. But can importing countries be relied on to represent the consumer's point of view? Probably they can if they are wholly dependent on imports to meet their requirements

[35] U. S. Department of State, *Bulletin*, Vol. XII (1945), pp. 772–73.

for the commodity in question.[36] In the more usual case, however, in which a country is dependent on imports for only a portion of its total consumption of the commodity, it is likely to be at least as much interested in protecting domestic producers as in securing a low price for its consumers.[37]

Secondly, all the current proposals for stabilizing agricultural prices through commodity agreements place considerable emphasis on the need for bringing about shifts in production along the lines of comparative advantage. This is certainly a desirable goal, but one may well question how successfully shifts of this kind can be encouraged within the framework of a system of international marketing controls. One of the most serious criticisms of international commodity agreements in the past has been concerned with their tendency to protect the position of relatively inefficient producers. Export quotas are usually allocated among the participating exporting countries in accordance with their relative shares in the world market in some previous period. Once a country has been assigned an export quota, it will be unlikely to submit to a reduction. If it is a relatively high-cost producer, moreover, it will tend to exert its influence in favor of a price high enough to permit it to fill its quota.

A further question concerns the possibility of controlling production of agricultural commodities on a world-wide scale. The Department of Agriculture's plan appears to rely heavily on production controls as the basic mechanism for offsetting the accumulation of excessive stocks and achieving production shifts. But among leading agricultural economists in this country, there has been an increasing tendency to question the effectiveness of existing methods of production control.[38] Restriction of acreage for a given crop tends to be accompanied by more intensive cultivation of the acres actually planted, especially if financial inducements are employed to bring about the desired restriction. A recent study indicates that no positive conclusions can be drawn as to the effectiveness of the AAA program in reducing production, although output was probably reduced somewhat below what it would have been if there had been no AAA.[39] Whether more effective methods, short of

[36] Even in such a case, however, political considerations may prevent an importing country from bargaining for the lowest possible price, *e.g.*, the United States in relation to Latin American coffee.

[37] Here we must beware of sweeping generalizations. The attitude of the country will depend on a great many factors—the importance of domestic production in relation to domestic consumption, the desire to make certain of adequate domestic supplies of the commodity in the event of war, the political power of farmers as a group, and so on.

[38] *Cf.* J. S. Davis, *On Agricultural Policy, 1926–38* (Stanford University, 1939), pp. 475–76; and T. W. Schultz, "Agriculture in the American Economy," *Am. Econ. Rev.*, Vol. XXX, No. 5 (February, 1941), pp. 136–39.

[39] *Cf.* G. Shepherd, "Changing Emphasis in Agricultural Price Control Programs," *Jour. Farm Econ.*, Vol. XXVI (1944), pp. 483–84. Comparisons of average production of leading

collectivism, of controlling the output of millions of individual farms can be devised remains to be seen. If critics of current agricultural policies have their way, the emphasis will be on shifts in production, rather than on restriction as such, in the future. As matters stand at present, however, one can easily visualize the accumulation of enormous stocks under an international scheme to control production and regulate prices.

This brings us to consideration of the proposal for an international buffer stocks agency. In theory, the operations of such an agency would be so managed as to ensure the fluctuation of prices around an equilibrium price, which would be subject to modification from time to time to conform with long-run shifts in basic supply and demand conditions. In practice, one may seriously question whether this result could be obtained. Even if political pressures could be left out of account, the equilibrium price would be difficult to determine. Actually, price goals would probably be determined largely as a result of the give and take of political compromise rather than on the basis of economic criteria. If past experience with similar schemes on a national scale is any guide, moreover, considerable pressure would be exerted on the international agency by interested groups to postpone the liquidation of stocks in periods of high or rising prices.

In emphasizing the difficulties which will stand in the way of attempts to stabilize agricultural prices through intergovernmental commodity agreements, it is not our purpose to demonstrate that such arrangements are of no value, but rather to stress the need for caution, especially with respect to elaborate plans for long-run price stabilization. If one could be certain that the views outlined in the State Department's proposals would dominate subsequent international negotiations, there would be no occasion to reiterate a note of caution here. It is not unlikely, however, that lip service may be paid to the State Department's views in setting up the international trade organization, but that subsequent negotiations for the solution of commodity problems may proceed along more or less traditional lines. If representatives of farm organizations in the major exporting countries press for the immediate adoption of price-stabilization schemes, it may be difficult for the proposed commodity commission to insist on the careful study of alternative measures which the State Department recommends.

Conclusions

How are the inconsistencies between our agricultural policies and our broad program for international economic coöperation to be resolved?

controlled crops for the years 1938–40 with that for 1930–32, just before the AAA program was put into effect, show that production of certain commodities increased or remained the same while production of other crops, notably cotton, decreased. In any case, huge unsaleable stocks had accumulated by the early 1940's, indicating that loan rates were too high to move the supplies actually being produced.

A satisfactory program from a theoretical point of view might embody features which would be utterly unacceptable politically. Fortunately, there are indications both within and outside the Administration of a growing recognition that changes are in order.[40] Without attempting to formulate a comprehensive program of agricultural reform, I should like to emphasize certain basic considerations which should be kept in mind in approaching the problem of international agricultural adjustment.

First of all, American agriculture cannot assume its appropriate position in post-war world trade unless parity price formulas are abandoned as soon as possible and replaced by policies designed to bring American agricultural prices into line with world prices. This may appear to be a rash suggestion in view of the political strength of the "farm bloc." But are farm bloc leaders irrevocably wedded to a policy of maintaining an agriculture price structure which has no relation to present-day realities? Undoubtedly, any attempt to remove all controls over farm prices would be vigorously resisted. But a politically acceptable policy might combine (1) gradual adjustment of most American agricultural prices to world prices, (2) some method of protecting the farmer from the impact of short-run market fluctuations, and (3) provision of financial aid to the farmer to encourage the necessary shifts in production.

Recently, a number of agricultural economists have suggested "forward pricing" plans under which prices would be related to market forces, but price goals (or forward prices) established in advance would eliminate much of the guess work for the farmer in planning his production. Most of these plans involve some method of compensating the farmer if the market price turns out to be lower than the forward price.[41] Forward prices would be revised from year to year to conform with shifts in demand and supply conditions.

Such a change in policy would pave the way for removal of many of the nationalistic measures which have been applied to our agricultural foreign trade. If the necessary reductions from present inflated price levels could be brought about gradually and a program of subsidies devised to aid the farmer during the transition period, it does not seem

[40] A committee of the American Economic Association recently reported on the problem of agricultural price policies and their effects. *Cf.* E. J. Working, "Report of *Ad Hoc* Committee on Agricultural Price Supports," *Am. Econ. Rev.*, Vol. XXXVI, No. 2 (May, 1946), pp. 817–26.

Recent speeches by Secretaries Byrnes and Anderson suggest that the administration recognizes the unfortunate effects of agricultural policies in relation to foreign trade. (*Cf. The New York Times*, November 24, 1945.)

[41] See the prize essays on the subject, "A Price Policy for Agriculture, Consistent with Economic Progress, That Will Promote Adequate and More Stable Income from Farming," in the *Jour. Farm Econ.*, Vol. XXVII (Nov., 1945).

See also *Postwar Agricultural Policy*, Report of the Committee on Postwar Agricultural Policy of the Association of Land-Grant Colleges and Universities (October, 1944) for a sound approach to the problem of agricultural adjustment.

altogether improbable that farm bloc leaders might be led to recognize the advantages which would accrue to the farmer in the form of expanded domestic and foreign markets.

My second suggestion concerns the approach to the problem of world agricultural surpluses. There is a danger that the success or failure of international coöperation in the commodity field within the next few years will be judged solely with reference to the number of international commodity agreements (or other stabilization schemes) successfully negotiated and put into effect. Actually, to the extent that national price policies result in substantial artificial price-differentials among competing countries, it may be very difficult to secure agreement on price-stabilization measures and perhaps even more difficult to operate agreements once they are put into effect. Thus the most important work to be accomplished lies in the direction of bringing national price policies more closely into line with international competitive forces. Neither the FAO nor the proposed ITO will be in a position to compel action along this line, but both agencies will be able to make strong recommendations to national governments.

Prices have been farthest out of line and nationalistic trade measures most pronounced, of course, in importing countries, especially on the continent of Europe. Any far-reaching changes in European agricultural policies will depend on successful international coöperation in many fields—in creating a real feeling of security against the threat of war, and in the fields of currency stabilization, international investment, commercial policy, and agricultural policy itself. But the agencies directly concerned with commodity problems can make a real contribution to this effort and should regard it as one of their most important functions. To a very considerable extent, the rigid agricultural import restrictions which came into effect in the early 1930's were imposed to protect agricultural producers from the impact of price instability in world markets. Agricultural-importing countries have a vital interest in international price-stabilization programs and might be induced to expand their imports substantially in conjunction with an international policy which would provide reasonable assurance against violent price declines and dumping. The reconversion period provides a unique opportunity for reorientation of European agricultural policies, since large imports (both in the form of relief and actual purchases) will in any case be essential until European production can be restored, and meanwhile plans can be made for a greater emphasis on the production of protective foods as opposed to the basic staples which have been so heavily protected in the past.

Finally, as an alternative to the buffer-stocks proposal, I should like to put in a word for an international price-stabilization scheme which would be specifically designed to deal with emergency situations. The real need, it seems to me, is for a plan which could be promptly put into

effect when world surpluses begin to appear and a serious decline in prices threatens. Why not set up an international agency which would be prepared to purchase excess supplies in such a situation and dispose of them relatively promptly by methods which would not depress prices in organized markets? It has frequently been suggested, for example, that something resembling our Food Stamp Plan could be worked out on an international scale, providing for the sale of food at lower-than-market prices to the unemployed or other low-income groups in various parts of the world.

Such a plan would, in one respect, have a more limited objective than the buffer-stocks proposal, since it would involve no attempt to offset rising prices through the sale of stocks during periods of upswing of the cycle. But agricultural production tends to expand quite rapidly in response to price increases. The real difficulty occurs in the downswing of the cycle, when production fails to contract. In view of the fact, also, that pressure might be exerted on an international buffer-stocks agency to postpone the liquidation of stocks, it is questionable whether price increases could be effectively counteracted by such an organization. The advantage of the emergency approach to the stabilization problem would lie in the greater possibility of avoiding the accumulation of enormous stocks, which would call for expensive storage facilities and would exert a prolonged depressing influence on the market. The chief limitation of such a scheme, on the other hand, would be associated with the possible difficulties involved in finding wide enough outlets for the surplus stocks without affecting organized markets. Solution of this problem would call for the active coöperation of many governments, but the potential contributions to improve nutrition should act as an important stimulus.

The emphasis in all the discussions leading up to the establishment of the United Nations Food and Agriculture Organization has been on the need for expansion of agricultural production to provide adequately for the nutritional needs of the world's population as a whole. In general, surpluses have appeared because of inadequate purchasing power in many parts of the world and among low income groups even in the wealthier nations, not because production has been excessive in relation to basic nutritional needs. Furthermore, the most serious deficiencies are to be found in the production and consumption of the so-called "protective" foods. In the light of these considerations, blind adherence to the restrictionist mentality which characterized agricultural intervention in the 1930's seems almost criminal today. It should be possible, though admittedly difficult, to develop a new approach which will eliminate the apparent conflict between the effort to expand production to meet nutritional needs, on the one hand, and to stabilize farm incomes on the other.

LANGE ON PRICE FLEXIBILITY AND EMPLOYMENT: A METHODOLOGICAL CRITICISM

By MILTON FRIEDMAN*

This article, initially undertaken as a conventional review of Oscar Lange's *Price Flexibility and Employment*,[1] has, in process, turned into a lengthy critique of the methodology used by Lange to evaluate the effects of price flexibility. This shift reflects contradictory impressions derived from a first reading of the book, impressions that paralleled and reinforced those derived from reading other work of the same kind. Here is an obviously first class intellect at work; yet the analysis seems unreal and artificial. Here is a brilliant display of formal logic, abstract thinking, complicated chains of deduction; yet the analysis seems more nearly a rationalization of policy conclusions previously reached than a basis for them. What is there about the type of theorizing employed that makes it sterile even in the hands of so competent a practitioner as Lange?

Lange's book is an excellent example to use in examining this question, precisely because it is, within its own frame of reference, so good. There is no magic formula for wringing knowledge about complicated problems from stubborn facts. No method is proof against incompetent application. The merits of a method of analysis can be judged only when it is carefully used by a master of it. Lange is clearly a master of what we shall later term taxonomic theorizing, and he has used it in this book to examine carefully an important problem. The book is, therefore, a good text for a methodological sermon.

I. *Summary of Lange's Analysis*

Lange seeks to answer the following question: Granted that the direct effect of a fall in the price of an underemployed factor of production is to increase the employment of that factor, what indirect effects may frustrate or reinforce this direct effect? There are, of course, an indefinitely large number of possible sources of indirect effects. Lange analyzes five: (1) changes in the demand for and supply of money (Chap. IV), (2) changes in expected future prices (Chap. V), (3) uncertainty (Chap. VI), (4) imperfect competition (Chap. VII), (5) international trade (Chap. VIII). The chapters dealing with these

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[1] Bloomington, Indiana: Principia Press. 1944. Pp. ix, 140. $2.00.

effects follow three chapters setting forth the problem and are followed by five chapters that seek to apply the analysis to an examination of (1) the "orthodox" theory which "denies that oversaving and limitation of investment opportunities can take place in an economy with flexible prices of factors of production and flexible interest rates" (p. 51), (2) the effects of "innovations," and (3) "the problem of policy," *i.e.*, the economic policy that ought currently to be adopted by society.

The analysis is consistently abstract; the style is perhaps best described as verbal mathematics; and the text is followed by a formal mathematical appendix analyzing the mathematical conditions for the stability of economic equilibrium. "Facts" are introduced to limit somewhat the range of possibilities considered, but, except for the final chapter, play no other rôle in the analysis. In the final chapter, which deals with "The Problem of Policy," facts are used to select from the bewildering variety of theoretical possibilities those that, in Lange's view, correspond most closely with the economic world prior to the First World War and subsequent to the second. As would be expected, the abstract reasoning is of a high order; Lange's past work has adequately demonstrated his mastery of formal logic, and his ability to manipulate symbols and concepts and to lead the reader astutely through a lengthy and abstruse theoretical argument.

The full detail of Lange's analysis of indirect effects cannot be reproduced here; a brief summary may indicate the kinds of indirect effects treated.

A. *Monetary Effects*

Suppose that an initial equilibrium position is disturbed by the appearance of an additional supply of some factor of production and that in consequence its price falls. This fall in price will stimulate the substitution of this factor for others (the intratemporal substitution effect), and the associated fall in the price of products produced primarily with this factor will stimulate the substitution of these products for products produced primarily with other factors (the expansion effect). These substitutions will in turn cause the prices of other factors and of other products to fall. Where and how will the process end?

This depends, in the first instance, on the monetary effect of these price changes. The initial and induced price declines increase the real value of the cash balances previously held by the community. If there is no change in either the real quantity of cash balances the community desires to hold or the nominal quantity of money, there is an excess supply of cash balances. The inflationary influence of this excess supply of cash balances prevents the prices of other factors and other products

from falling as much as the price of the factor initially underemployed and the prices of the products produced primarily with that factor, and thereby permits the initial price decline to be effective in producing a new equilibrium with full employment of the initially underemployed factor.

There is, in Lange's terminology, a positive monetary effect. But suppose the price declines lead to a reduction in the real quantity of cash balances available relative to the real quantity desired—for example, because the nominal quantity of money is reduced by a larger fraction than prices fall. This negative monetary effect is a deflationary influence that forces all prices down, leads to more unemployment than there was initially, and causes a cumulative decline in prices. Why should the nominal quantity of money remain constant, increase, or decrease? What is the mechanism or process whereby this occurs? Lange is not interested in such questions. He is enumerating theoretical possibilities, not describing the real world.

B. *Price Expectations*

Expectations about future prices constitute one important factor, so far neglected, that may cause a change in the real quantity of cash balances the community desires to hold. Suppose the fall in the price of the underemployed factor leads to a general expectation of a larger (percentage) fall in the price expected to prevail at a later date, and that the associated declines in prices of products and other factors lead to similar expectations about their future prices (elastic price expectations). It will then be advantageous to shift purchases from the present to the future. In so far as this shift affects the underemployed factor, it may partly, fully, or more than offset the direct increase in employment. In so far as it affects products and other factors, it is equivalent to a general desire to hold a larger real quantity of cash balances—to substitute money for goods. Unless the real quantity of money available increases at least proportionately, there will be a negative monetary effect. Similarly, if future prices are expected to fall by a smaller percentage than present prices (inelastic price expectations), it will be advantageous to shift purchases from the future to the present, the real quantity of cash balances that the community desires to hold will decrease, and the monetary effect will be positive unless the real quantity of money available decreases at least proportionately.

C. *Uncertainty*

The strength of the intertemporal substitution effects engendered by changes in expected future prices depends on the degree of uncertainty that attaches to these expectations. The periods of time for which men

will plan—their economic horizons—will be shortened by an increase in the uncertainty they attach to their expectations and lengthened by a decrease in uncertainty. "An economy with flexible factor and product prices is likely to involve greater uncertainty of price expectations than one in which some prices are rigid" (p. 34). In consequence, intertemporal substitution effects will tend to be smaller in the former than in the latter economy.

D. *Imperfect Competition*

Imperfections of competition arising from monopolies and monopsonies, or monopolistic competition and monopsonistic competition, add nothing new to the analysis; they necessitate solely a change in the form of statement. Oligopolies and oligopsonies are another matter. Lange regards a "kink" in the demand schedule as the essential feature of oligopoly, and in the supply schedule as the essential feature of oligopsony. These "kinks" imply discontinuities in the corresponding marginal revenue or marginal cost curves. In consequence, the marginal cost curve can shift without giving an oligopolist an incentive to change the output or price of his product, and the marginal-value-productivity curve of a factor can shift without giving an oligopsonist an incentive to change the quantity purchased or the price of the factor. Oligopoly and oligopsony may, therefore, thwart both intratemporal and intertemporal substitution, the incentive to a change in output or in the employment of factors being lost in the discontinuities. Indeed, if the underemployed factor is purchased solely by oligopolists, even the direct effect of a reduction in its price may be simply an increase in the oligopolist's profit, and no increase in employment.

E. *International Trade*

The final source of indirect effects, international trade, hardly deserves separate consideration. The direct effect of a reduction in the price of an underemployed factor is likely to be concentrated mainly in the country in which the factor is located whereas the indirect effects spread through the world. Consequently, if the country in question is a small part of a world in which trade is tolerably free, most of the indirect effects are experienced elsewhere and international trade is a stabilizing influence. If the country is a large part of the world economy, the indirect effects will have important reactions on it and "the result depends on the net effect upon the real quantity of money in the country under consideration" (p. 50).

II. *Criticism of Lange's Analysis*

"We have found," says Lange in summarizing some of his results at the beginning of the chapter on "The Problem of Policy," "that only

under very special conditions does price flexibility result in the automatic maintenance or restoration of equilibrium of demand for and supply of factors of production. These conditions require a combination of such a responsiveness of the monetary system and such elasticities of price expectations as produce a positive monetary effect, sensitivity of intertemporal substitution to changes in interest rates (if the positive monetary effect leads to a change in the demand for securities rather than to a direct change in the demand for commodities), absence of highly specialized factors with demand or supply dependent on strongly elastic price expectations, and, finally, absence of oligopolistic or oligopsonistic rigidities of output and input. To a certain extent, the absence of a positive monetary effect may be replaced by the stabilizing influence of foreign trade in an atomistic international market (among the different countries)" (p. 83).

The implication might be thought to be that these "very special conditions" for full employment will seldom or never be fulfilled. But such an implication is contradicted by Lange's next sentence: "There are good reasons to believe that these conditions were approximately realized in the long run during a period which extended from the 1840's until 1914" (p. 83).

This apparent contrast between "very special conditions" and their satisfaction for some 70 years emphasizes what seems to the reviewer the fundamental weakness of the kind of theorizing incorporated in this book—a weakness of the species, not of this example, since the book is perhaps as ably constructed an example of the species as one could hope to find.

A. *Alternative Theoretical Approaches*

Theory can be used in two very different ways in the development of a science. The approach that is standard in the physical sciences is to use theory to derive generalizations about the real world. The theorist starts with some set of observed and related facts, as full and comprehensive as possible. He seeks a generalization that will explain these facts; he can always succeed; indeed, he can always find an indefinitely large number of generalizations. The number of observed facts is finite, the number of possible theories is infinite; infinitely many theories can therefore be found that are consistent with the observed facts. The theorist therefore calls in some arbitrary principle such as "Occam's Razor," and settles on a particular generalization or theory. He tests this theory to make sure that it is logically consistent, that its elements are susceptible of empirical determination and that it will explain adequately the facts he started with. He then seeks to deduce from his theory facts other than those he used to derive it, and to check these

deductions against reality. Typically some deduced "facts" check, others do not; so he revises his theory to take account of the additional facts.

The ultimate check of deduced against observed facts is essential in this process. A theory that has no implications that facts, potentially capable of being observed, can contradict is useless for prediction: if all possible occurrences are consistent with it, it cannot furnish a basis for selecting those that are likely.

The approach used by Lange, and all too common in economics, is very different. Lange largely dispenses with the initial step—a full and comprehensive set of observed and related facts to be generalized—and in the main reaches conclusions no observed facts can contradict. His emphasis is on the formal structure of the theory, the logical interrelations of the parts. He considers it largely unnecessary to test the validity of his theoretical structure except for conformity to the canons of formal logic. His categories are selected primarily to facilitate logical analysis, not empirical application or test. For the most part, the crucial question, "What observed facts would contradict the generalization suggested, and what operations could be followed to observe such critical facts?" is never asked; and the theory is so set up that it could seldom be answered if it were asked. The theory provides formal models of imaginary worlds, not generalizations about the real world.

This formal approach takes a rather special cast in this book, a cast that tends, on the one hand, to conceal somewhat the formal and artificial character of the analysis, while, on the other, it gives special play to many of the weaknesses of formal theorizing in general. Theory is here used largely as a taxonomic device. Lange starts with a number of abstract functions whose relevance—though not their form or content—is suggested by casual observation of the world—excess demand functions (the orthodox demand schedule minus the orthodox supply schedule) for goods and money, the variables including present and future (expected) prices. He then largely leaves the real world and, in effect, seeks to enumerate all possible economic systems to which these functions could give rise. The kind of economic system and the results in that system will depend on the specific character of the functions and their interrelations, and there clearly are a very large number of permutations and combinations.

Having completed his enumeration, or gone as far as he can or thinks desirable, Lange then seeks to relate his theoretical structure to the real world by judging to which of his alternative possibilities the real world corresponds. Is it any wonder that "very special conditions" will have to be satisfied to explain the real world? If a physicist or astronomer were to explore all possible interrelations among a variable number of

planets, each of which could be of any size, density, or configuration, and possess any possible gravitational properties, he would surely find that only very special conditions would explain the existing universe. There are an infinite number of theoretical systems; there are only a few real worlds.[2]

Wherein is the procedure attributed to the natural sciences superior to the formal theorizing, and its taxonomic variant, adopted by Lange? Is it not preferable to derive all possible theories rather than a single theory? The reason this question cannot be answered with the affirmative it seems superficially to invite is that each theory included in the set of possible theories derived by the Lange approach is of necessity very different from, and much inferior to, the single theory devised to explain a full and comprehensive set of related facts. The attempt to construct a system of models leads the theorist to make each a formal entity. And this, in turn, leads him to consider an enormously oversimplified universe and to make classifications within that universe that have no direct empirical counterpart. The complexity of the approach, the limited range of factors it can comprehend, and the urge to have the results bear on pressing current problems are likely to, though they need not, lead him into positive error. The resulting system of formal models has no solid basis in observed facts and yields few if any conclusions susceptible of empirical contradiction. Lange's book offers apt illustrations of each of these points and we shall consider them in order.

B. *Structural Weaknesses of Lange's Approach*

1. *Oversimplification*—To make the search for all possible theories at all feasible, the theorist must start with but a few kinds of functions. If he insists on making his analysis specific, he will have to use only a few functions of each kind, and introduce only a few separate variables.

[2] Compare A. C. Pigou, *The Economics of Welfare*, 4th ed. (London, Macmillan, 1932), pp. 6–7.

"It is open to us to construct an economic science either of the pure type represented by pure mathematics or of the realistic type represented by experimental physics. Pure economics in this sense—an unaccustomed sense, no doubt—would study equilibria and disturbances of equilibria among groups of persons actuated by any set of motives x. Under it, among innumerable other subdivisions would be included at once an Adam-Smithian political economy, in which x is given the value of the motives assigned to the economic man—or to the normal man—and a non-Adam-Smithian political economy, corresponding to the geometry of Lobatschewsky, under which x consists of love of work and hatred of earnings. For pure economics both these political economies would be equally true; it would not be relevant to inquire what the value of x is among the actual men who are living in the world now. Contrasted with this pure science stands realistic economics, the interest of which is concentrated upon the world known in experience, and in nowise extends to the commercial doings of a community of angels. Now, if our end is practice, it is obvious that a political economy that did so extend would be for us merely an amusing toy. Hence it must be the realistic, and not the pure, type of science that constitutes the object of our search. We shall endeavour to elucidate, not any generalised system of possible worlds, but the actual world of men and women as they are found in experience to be."

(This approach is exemplified by much of what is termed "Keynesian" economics.) If he is willing, as Lange is, to keep his analysis exceedingly abstract, he can consider an indefinitely large number of variables and of functions of each kind, since, on the abstract level on which he has chosen to operate, multiplication of variables and functions of the same kind is likely to mean simply the insertion of appropriate "etc.'s" into the argument; it is not likely to add any essential complication.

The theorist thereby gains the appearance of generality without the substance. For example, Lange deals at most with four kinds of functions: they are the excess demand functions for (1) commodities (factors of production and products); (2) stocks (securities promising an indefinite income); (3) bonds (fixed-income securities); and (4) money.[3] There may be an indefinitely large number of functions of each of the first three kinds, since there may be many commodities, stocks, and bonds. And each function may have an indefinitely large number of independent variables, since excess demand is taken to be a function of all present and future (expected) prices. Further, other functions (cost functions, supply functions, etc.) are sometimes introduced. But the only purpose they serve is to provide a basis for imposing restrictions on the shape or structure of the excess demand functions.

The basic fact is that Lange's system—his abstract economic world—contains only four kinds of things and four kinds of functional relations. There is no room in his theoretical system (as contrasted with his digressions—see the discussion in Section II, C, 3, below of "friction") for such obviously important factors as lags in response, discontinuities in feasible investment undertakings, physical limitations on the time that it takes for economic activities to be initiated and conducted; or for differentiation in the structural rôle of different kinds of products or factors of production, different kinds of securities or bonds, or even different kinds of money. There is no room for any mechanism of response, except as the mechanism is incorporated in the abstract functions; or, in any fundamental sense, for uncertainty—probability distributions rather than single-valued expectations (see the discussion below in Section II, C, 4, of uncertainty). And even the functions considered are far from general; they are, for example, implicitly assumed to be single-valued.

The theorist who seeks to devise a generalization from observed facts will also have to simplify and abstract from reality. But it is clear that he need not limit himself to anything like so simple a system as Lange uses.

[3] A minor qualification is necessary when imperfect competition is introduced. This requires a change in the name of the excess demand function, but not in its abstract character or rôle.

2. *Use of Classifications That Have No Direct Empirical Counterpart*—A second weakness of formal theorizing, and especially the taxonomic variant adopted by Lange, is the kind of classifications to which it leads. The theorist starts with a simplified system, either specific and containing only a few functions and variables, or, as in Lange's work, highly abstract and nonspecific and containing many functions and many variables. He seeks to determine all results that can flow from the assumed system. The number of results, of possible interrelations among the elements of his system, is bound to be very large. Only a few of the combinations and permutations correspond with real worlds, since there are only a few real worlds. His desire to be realistic motivates him to classify his theories, results or concepts along lines that have a direct empirical counterpart. But such classifications will not fit the greater part of his theoretical structure, since only by chance would a classification suited to the small part of his analysis that corresponds with reality also be suited to the larger part that does not.

The theorist's urge to be realistic therefore almost inevitably conflicts with his urge to be theoretically comprehensive. The result is likely to be a compromise. He uses classifications (and especially names) that appear to have empirical meaning; but in order to apply them to his entire analysis, he is forced to define them in a way that eliminates their direct empirical content. The end result is likely to be classifications that do not satisfy the initial empirical motivation and yet are not those best suited to the theoretical analysis.

An example of a classification that has no direct empirical counterpart is Lange's classification of monetary changes as having positive, neutral, or negative effects. Lange considers that an initial decline in the price of an underemployed factor may have three ultimate results on its employment: (1) a new equilibrium at full employment of that factor, (2) continued underemployment of that factor of the same magnitude as the initial underemployment, (3) a cumulative increase in the underemployment of that factor.[4] In discussing the effect of changes in price expectations and in the monetary system on the ultimate result, he is naturally led to classify different kinds of changes in price expectations and the monetary system according as they lead to one or another result. If they result in full employment of the initially underemployed factor, the monetary effect is said to be positive; if they result in continued underemployment at the initial level, the monetary effect is said

[4] Lange recognizes the existence of two other possibilities: continued noncumulative underemployment (4) less than the initial underemployment, or (5) more than the initial underemployment. He disregards these because they imply multiple positions of equilibrium and "the possibility of multiple equilibrium . . . seems to be very unlikely in practice." The adequacy of this justification is discussed below (see Sec. II, C, 1, below). In principle there are still other possibilities involving one or more changes in direction.

to be neutral; if they result in a cumulative increase in underemployment, the monetary effect is said to be negative.[5]

The words used lead one to expect that a neutral monetary effect, for example, would be produced by some kind of a neutral monetary policy, a policy that in some way would involve setting up a monetary framework and then not manipulating it in response to detailed economic changes. Nothing like this is the case. An explicit monetary policy aimed at achieving a neutral (or positive or negative) monetary effect would be exceedingly complicated, would involve action especially adapted to the particular disequilibrium to be corrected, and would involve knowledge, particularly about price expectations, that even in principle, let alone in practice, would be utterly unattainable.

Similarly, suppose one could observe in isolation the reaction of an economic system to the initial underemployment of a single factor of production. Would it be possible to tell whether the monetary effect was positive, neutral, or negative? One could observe the result and then say that the monetary effect was of the kind stated as necessary to produce that result. But this would, of course, be pure tautology. One could not, by any reasonable stretch of the imagination, obtain and combine the information about monetary action, price expectations, and the shape of the relevant functions that would be necessary to determine what the monetary effect would be and thereby to predict the ultimate result. Lange's classification is designed to classify theoretical possibilities; it has no direct counterpart in the real world.[6]

C. *Errors of Execution Fostered by Lange's Approach*

The weaknesses of oversimplification and unsatisfactory classification so far considered are implicit in the logic of the formal theorizing, and its taxonomic variant, adopted by Lange. The errors of execution to be considered now are not. Psychological, not logical, considerations make them likely. It is obviously impossible to make a comprehensive list of possible errors; there is no limit to the kinds of errors mortal man may commit. We shall, therefore, restrict the discussion to the following, which are exemplified in Lange's book: (1) casual empiricism; (2) invalid use of inverse probability; (3) introduction of factors not included in the fundamental theoretical system, exemplified by the introduction of "friction"; (4) unwillingness to accept logical but unrealistic implications of the system, exemplified by the treatment of "uncertainty."

[5] This definition is, in part, read into Lange. His explicit definition is in terms of the relative changes in the demand for and supply of money; as he uses it, this definition reduces to that stated above.

[6] Two other examples of classifications that have no direct empirical counterpart are the classification of claims into stocks, bonds, and money (p. 15) and the classification of the set of elasticities of price expectations as prevailingly elastic, inelastic, or of unit elasticity (p. 22).

The first two are fostered by the complexity induced by the taxonomic approach and the resultant desire to limit the number of possibilities considered; the second two, by the urge to be realistic.

The number of permutations and combinations of even a small number of elements each of which can have several forms or values is so large that there is a strong incentive to limit the number of possibilities considered in detail. One obviously attractive method, though one that is really inconsistent with the basic theoretical approach, is to rule out possibilities that on one ground or another can be judged "unrealistic" or "extreme." There is nothing wrong with this procedure if the evidence on which the possibilities are judged to be unrealistic is convincing. The danger is that the urge to simplify and the preoccupation with abstract logic will lead to the ruling out of possibilities on grounds that are either unconvincing or wrong. Lange does not avoid this danger. He rules out many possibilities simply by asserting that they are unrealistic, without presenting any empirical evidence (casual empiricism), and others because they are special theoretical cases (invalid use of inverse probability).

1. *Casual empiricism*—The example of casual empiricism that shows the motivation best is Lange's statement: "These complications are disregarded in the text in order to simplify the argument and also because they do not seem to be very important in practice" (p. 57n). The complications in question are certain possibilities that arise when, contrary to the assumption made in the text, the "amount of real excess cash balances available . . . [enters] as an independent variable in the function expressing the propensity to consume" (p. 57n). The statement does not, therefore, refer to facts of immediate experience; yet no evidence is given for the validity of the empirical conclusion.

The example that perhaps shows best why no confidence can be placed in such statements and how difficult it would be to test them is a statement cited in footnote 4: "We disregard, however, the possibility of multiple equilibrium because it seems to be very unlikely in practice" (p. 10, footnote 13). How could this empirical statement be tested? One way would be to evaluate explicitly from empirical evidence, or, at least, discover the form of, each of Lange's indefinitely numerous equations, and determine mathematically whether, and if so, under what conditions, the resultant system of equations has one or more solutions for a relevant range of values of the independent variables.

Another way would be to specify some criterion for determining when an empirical situation is an equilibrium position in Lange's system and when it is a disequilibrium position in the process of being corrected; secure data on both the dependent and independent variables for a large number of empirically realized equilibrium positions; classify these

positions into sets for which the values of the independent variables are the same; and for those sets (if any) containing more than one position compare the dependent variables to determine whether they are the same.

Lange, of course, presents no evidence along either of these lines; it seems exceedingly doubtful that it would be feasible to do so; and there appears to be no other method of judging from empirical evidence the likelihood of multiple positions of equilibrium.

Another example of casual empiricism is Lange's statement that "empirically it seems highly unlikely that there is any decrease at all in the rate of increase of uncertainty" (p. 33, footnote 12). The only definition of uncertainty Lange gives leaves at least one numerical parameter unspecified.[7] Even if specific values were given to the unspecified parameters, it is exceedingly doubtful that it would be possible, even in principle, to measure the degree of uncertainty attached to a man's expectations about future prices, as Lange defines that term. Yet he finds it possible to make an empirical statement about not only the first derivative of uncertainty but even the second derivative.[8]

The kind of casual empiricism exemplified by the statements quoted and cited is bad empiricism not because these statements are wrong, but because there is no way of telling whether they are right or wrong. None of them refers to a fact of immediate experience about which the reader can be expected to be an expert,[9] or a fact about which Lange can be expected to be an expert, or a fact that thorough and widely-known empirical research has so firmly established that it can be taken as demonstrated without citation. Yet they are simply asserted to be true and not a shred of evidence is offered for them. The reader must take them or leave them, he cannot judge them. If this is good practice for empirical work, it is equally good for theoretical. Lange might as well simply assert his theoretical conclusions without giving the basis for them; and no empirical worker need hesitate to assert: "It is obvious on theoretical grounds that . . . ."

In the absence of the empirical evidence, no one of Lange's empirical

[7] Lange defines the degree of uncertainty of price expectations as the difference between two extreme expected prices, the higher being attributed a probability x of being exceeded, and the lower a probability y of not being exceeded (Lange does not introduce these symbols, but gives a numerical example in which both x and y are .05). x and y are the unspecified parameters referred to above. A single parameter would suffice if x were always required to be equal (or bear any other fixed relation) to y or if the degree of uncertainty were defined as the width of the narrowest price band (or set of price bands) within which the entrepreneur feels z per cent confident $[z=100(1-x-y)]$ that the future price will be.

[8] Other examples of what I have called "casual empiricism" appear on pp. 9, 29, 40, 53, 59, 61, 65, 67, 74. This list is not intended to be exhaustive.

[9] Lange makes a few empirical statements that might be interpreted as referring to facts of immediate experience. These have been excluded from the list given in the preceding footnote.

statements can be considered more than a conjecture, and his theoretical analysis must be considered incomplete and fragmentary, since he uses these empirical statements to limit the number of possibilities analyzed.

2. *Invalid Use of Inverse Probability*—A second method which Lange uses to reduce the number of possibilities he considers is to rule out certain possibilities because they are "special cases." The quotation cited earlier from the beginning of Lange's chapter entitled "The Problem of Policy" demonstrates that Lange realizes that "very special" theoretical conditions may well be empirically realistic. Yet elsewhere he writes as if this were impossible. For example, Lange asserts that "the marginal-revenue schedule (of a monopolist) is negatively sloped . . . as a rule, because the demand schedules are assumed in the text to be negatively sloped. Exceptions are possible when the demand schedule has a strong curvature which is convex toward the axis of abscissae" (p. 37).

But how does he know that what he calls "exceptions" are not the rule in experience? The only justification he gives for regarding them as exceptions is the sentence just quoted. The implication of this sentence presumably is that "a strong curvature which is convex toward the axis of abscissae" is mathematically a special case; that if all possible negatively sloping curves were enumerated, only a small fraction would have this property. The conclusion that only a small fraction of real marginal revenue schedules have this property follows only if certain assumptions are made about the probability of the various mathematical possibilities. But there is no basis for assigning such probabilities; the conclusion therefore represents an invalid use of inverse probability reasoning.[10]

The essence of the fallacy can be more simply indicated by an example that is faithful to Lange's logic, but refers to immediately observable facts. We start with the proposition that the price of a single newspaper will be a whole number of cents. The price of a newspaper could be 1 cent, 2 cents, 3 cents. . . . We conclude that, as a rule, the price will be more than 10 cents, since there are only 10 possible prices equal to or less than 10 cents, but an indefinitely large number more than 10 cents, and a price of 10 cents or less is therefore a "very special" case. The conclusion is of course false, yet the reasoning by which it was reached does not differ from that implied by Lange at many points.

If this kind of reasoning is to lead to valid conclusions, there must be

[10] None of the examples in Lange of what seems to be invalid use of inverse probability is as explicit as the hypothetical example given in the next paragraph of the text. The attribution of this fallacy to him, though it involves some measure of interpretation, seems justified both by the general phrasing and the absence of any other possible basis for statements he makes. The justification is clearest for the example cited above and the parallel example on the same page dealing with the marginal expenditure schedule of a monopsonist. For other, somewhat less clear examples, see pp. 51, 53, 65, 68, 69, 80.

some basis for judging the probability of the various theoretical possibilities. A classical example where this is possible is the reasoning underlying the conclusion that, under essentially static conditions, demand curves are, as a rule, negatively sloped. The exception, Giffen's paradox of a positively sloped demand curve, corresponds to conditions (inferior good, large income effect relative to substitution effect) that are not only theoretically special, but also appear empirically special, as judged by everyday observation of the world.

3. *Introduction of Friction*—We turn now to a pair of errors that derive less from the urge to simplify than from the urge to be realistic. As said above, the urge to be realistic is likely to conflict with the urge to simplify. When it does, one way to attain both objectives is to be illogical. Lange's book provides examples of two quite different devices whereby realism can be gained by the sacrifice of logic: the introduction of "friction," and the treatment of uncertainty.

Despite the numerous possible results that can flow from Lange's simplified theoretical system, there are realistic possibilities left out. As mentioned earlier, there is no place in Lange's system for lags in response, for delayed reactions, for the manifold hindrances to change we are wont to refer to as "friction." Accordingly, to make the possibilities he considers more comprehensive, Lange introduces friction. For example, "with some friction present, the effects of changes in factor prices may become too weak to be of great practical significance" (p. 34).[11] Despite Lange's care to define such terms as "securities," "bonds," "money," and "products," he nowhere defines "friction." There is a very good reason for this. Lange's "friction" is a *deus ex machina,* it has no place in his theoretical system; he cannot really define it without going outside his system, and, indeed, contradicting it.

His system contains equations purporting to show the excess demand for commodities, stocks, bonds, and money as a single-valued function of all present and future (expected) prices. What can friction mean in terms of this system? It might be interpreted as meaning that the excess demand is not always that shown by the equations; but that would simply mean that the equations were wrong. Either a different system of equations is required (for example, one containing stochastic elements), or no system of equations exists that describes the economy about which Lange is talking. It might be interpreted as meaning that excess demand is a function not only of present and future prices but also of past prices and quantities. (This seems the interpretation

[11] Friction is introduced on pp. 18, 19, 34, 47, 51, and 61. On p. 51 it is used in describing an "orthodox" position. The other five uses are all in connection with Lange's own analysis. It is interesting that, in each of these cases, friction is introduced to minimize the possible favorable influence of flexible prices on employment; at no point is it introduced as a factor that might offset unfavorable influences.

that accords best with common-sense notions about friction.) But then the equations should be rewritten and the system expanded to include these additional variables; if this were done, friction would disappear as a separate entity.

There are presumably other possible interpretations, but those I have been able to think of are either inconsistent with Lange's theoretical system or require a thorough revision of the system; none gives "friction" a separate existence as a supplement to Lange's theoretical system. Those of Lange's conclusions that rely on the introduction of friction are therefore different in kind from the rest of his conclusions. They are not the logical implications of a consistent theoretical system, but simply *obiter dicta* whose acceptance involves implicit expression of scepticism about the rest of the analysis.

4. *Treatment of Uncertainty*—Lange's treatment of uncertainty exemplifies an unwillingness to carry his theoretical reasoning to its logical conclusion if that conclusion is clearly unrealistic. The phase of uncertainty with which he deals is the uncertainty attaching to men's expectations about future prices. "At best, the entrepreneur or consumer expects that a given future price can have *a set of possible values*, some probability corresponding to each of these values" (p. 29; italics in original). To deal with these stochastic phenomena in full generality would enormously complicate the analysis. Lange avoids this by arguing that "we can substitute for the most probable prices expected with uncertainty equivalent prices expected with certainty. Let us call them the *effective* expected prices .... By means of this device, uncertain price expectations can be reduced to certain ones. In consequence, an increase in sellers' uncertainty acts in the same way as a reduction of their expected future selling prices, while an increase in buyers' uncertainty acts in the same way as an increase in their expected future prices of purchase" (pp. 31–32).

The substitution of a single "effective expected price" for a probability distribution of expected prices is a definite departure from the taxonomic approach followed in most of the book. The taxonomic approach would require consideration of all possibilities—those in which a single price cannot be substituted for a probability distribution of expected prices, as well as those in which it can. Such generality could have been attained by treating the entire probability distribution, rather than a single "effective expected price," as an independent variable in the appropriate excess demand function. The resulting model would, formally at least, have been consistent with any observable phenomenon and hence, like most of Lange's theoretical system, incapable of empirical contradiction.

This is not true of the partial model that results from Lange's de-

parture from his usual procedure. Since it is only a partial model, its implications need not include all possible observable behavior; hence it is susceptible of empirical contradiction. Lange does not test his model by deducing all its implications and comparing them with actual behavior. He states some of the implications of his model and these are all consistent with actual behavior. He does not, however, state all the implications of his model. Had he done so he would have found, as we shall show, that some of them are contradicted by the actual behavior of men in the presence of uncertainty. His model must therefore be rejected.

Lange uses his model "to determine the length of the period of time over which individuals plan their purchases and sales. This period has been called very aptly the *economic horizon* of the individual. As long as price expectations are *subjectively* certain, the economic horizon is indeterminate. This indeterminateness disappears when uncertainty is allowed for.

"As a rule, the uncertainty of price expectations is the greater the more distant the planned purchase or sale is (at least from a given date on) . . . . Consequently, the effective expected prices of goods to be sold at various future dates decrease, while the effective prices of goods to be bought at various future dates increase. This imposes a limit upon the dates for which any sales or purchases are planned at all. Firms (entrepreneurs) find that, beyond a certain date, the effective expected prices of their products are less than the effective expected marginal costs and that the effective expected marginal value productivities of the factors they plan to employ are less than the effective expected prices of these factors. In a similar way, households (consumers) find that beyond a certain date the effective prices of goods they plan to buy are higher than the effective marginal rates of substitution of the respective goods for money. Thus beyond a certain date the effective expected prices of goods to be sold are too low to induce the planning of sales, while the effective expected prices of the goods to be bought are too high to induce the planning of purchases. No sales or purchases are planned beyond this date. In this way the length of the economic horizon of each individual and corporation is determined" (pp. 32–33).

Now this conclusion, which is as far as Lange goes, sounds eminently reasonable. No man plans specific purchases or sales extending into the indefinite future. It does not pay to do so when the future is uncertain. And if this were (a) a necessary implication and (b) the only logical implication of Lange's theoretical model, no fault could be found with the model. But neither condition is satisfied. It is not a necessary implication because the effective expected selling prices could fall at a rapidly decreasing rate, the effective expected buying prices (for com-

parable units) could rise at a rapidly decreasing rate, both could approach asymptotes, and the asymptote of the selling prices could be above the asymptote of the buying prices. In this case there would be no finite economic horizon.[12]

Suppose effective expected selling prices decline and buying prices rise at rates that make the economic horizon finite. Lange's conclusion is then a necessary implication of his model, but by no means the only implication, and some of the other implications are far less reasonable. Consider again his model in terms of an individual family. According to the model, the head of the family can be supposed to behave in the real and uncertain world as he would in a fictitious world in which he expected with certainty that his income would decline steadily over time and that the prices of the things he buys would increase steadily over time.

In the fictitious world, these are not conjectures; they are expectations held with certainty. He is certain that ultimately his current income will be so small relative to the prices of the things he wishes to buy that starvation will be inevitable for his family unless he can command resources other than his current income. (This follows from the conditions imposed on the rates of rise and decline in order to assure a finite economic horizon.) His first impulse will be to save and thereby provide additional resources. But it will do him no good to save in the form of money, since the certain rise in prices will wipe out the real value of the savings. Nor will it do him any good to save in the form of securities, since these will then become something he wants to sell, and Lange tells us that he must be assumed to behave as if he expected with certainty that the prices of goods to be sold will decline. It will therefore be even worse to put his savings in securities than to keep them in cash. How can he escape this dilemma, since everything he touches turns to ashes?

One escape is to convert his savings into physical stocks of foodstuffs and other necessities and store them in storage space he purchases outright. (If he were to rent storage space, he would expect with certainty that the rent would rise so high that at his economic horizon he could not meet it.)[13] If he were fortunate; that is, if the expected future prices

[12] In a footnote attached to the passage quoted above, Lange states: "There is good reason to believe that the risk premium increases at an increasing rate as the date of the planned purchase or sale extends farther into the future. . . . Our conclusion in the text is quite independent of the fact that the increase in the risk premium takes place at an increasing rate." The condition in the first of these sentences would be sufficient to guarantee a finite economic horizon, though it is more stringent than is necessary. The second of the sentences is therefore wrong or misleading. If the risk premium is not assumed to increase at an increasing rate, some other condition must be imposed to guarantee a finite economic horizon.

[13] If we were to extend Lange's Model to uncertainty about things other than prices, even stockpiling would be no solution. There is some uncertainty about the future safety of goods in the stockpile; they might deteriorate or be destroyed by disaster. Following Lange, we may

of goods to be bought did not rise too rapidly or of goods to be sold fall too rapidly, and if the expected life of his family (also converted presumably into an equivalent single value expected with certainty) were not too long, he and his family might be able so to contrive their affairs as to die natural deaths. The only other alternative to letting nature take its course at the appointed time is definitely to plan to commit suicide at a definitely specified future date. If the pincers of falling selling prices and rising buying prices is expected with certainty to close so fast that no possible skimping can yield a stockpile sufficient to last until natural death ends all planning, what else is there to do but plan for suicide?

Whichever alternative the man adopts, if we assume him to behave as if he expected with certainty falling income and rising prices, his actions will be affected immediately, and not only when the economic horizon arrives (as of course it never would, since he would soon find out that he was wrong to hold expectations with certainty). He will immediately curtail his standard of living below the one he would adopt if his expectations were rosier, and immediately start accumulating physical stockpiles and buying storage space. And similarly, business men, acting in accordance with Lange's model, would immediately start planning the liquidation of their enterprises.

This is, of course, a fantastic picture. It certainly does not correspond to the way men behave when faced with uncertainty. Yet it is a logical consequence of Lange's model, arrived at simply by filling in the gaps in Lange's deductions from the model.[14] The model must either be discarded or all its implications, and not merely those that seem realistic, be accepted. The device Lange adopts to simplify his analysis apparently also makes it a false image of reality. His model does not allow, in any fundamental sense, for stochastic variation.

III. *Conclusion*

We have not considered Lange's application of his theoretical analysis to "The Problem of Policy," as he entitles the last chapter of his book,

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substitute for the actual expectations the certain expectation that a specified fraction of the stockpile, and no more, will be usable. This fraction will decline with time. Ultimately, therefore, even the stockpile will not suffice.

[14] The point can be put more nearly in Lange's own terminology. Lange draws the conclusion from his model that "no sales or purchases are planned beyond this date [the economic horizon]" (p. 33). The argument above is that his model justifies the broader conclusion: "It is planned to make no sales or purchases beyond this date." This broader conclusion implies the conclusion Lange states but is not implied by it. The fact that this broader conclusion is an implication of Lange's model, means that Lange's footnote 15 on p. 33, in which he argues that "the economic horizon, as here defined, does *not* limit the time over which provisions for the future are made," is inconsistent with his model, though reasonable as a description of human behavior.

nor do we intend to do so. This chapter represents the combination of unsupported empirical statements and theoretical conclusions that, as we have seen, neither deserve any particular confidence nor bear very directly on the real world. The lack of relevance of most of the theoretical analysis to the real world that derives from oversimplification and formal classification is concealed by the errors of execution enumerated above—casual empiricism, invalid use of inverse probability, introduction of factors external to the theoretical system, and the use of only some of the implications of a formal model that has others that are unrealistic.

Correction of these errors would make the analysis formally correct; it would also make it abundantly clear that the analysis has only the remotest bearing on problems of policy. The analysis would then assume the cast of Lange's mathematical appendix—which no one would be likely to consider directly applicable to problems of policy. Indeed, the analysis purged of the fallacies might best be formulated mathematically, since this would be more likely to assure logical rigor and, in addition, would avoid a tendency, almost unavoidable in verbal mathematics, to state conclusions that flow from special assumptions as if they had wider relevance, and to stress special cases that lead to conclusions of particular interest.

The basic sources of the defects in Lange's theoretical analysis are the emphasis on formal structure, the attempt to generalize without first specifying in detail the facts to be generalized, and the failure to recognize that the ultimate test of the validity of a theory is not conformity to the canons of formal logic but the ability to deduce facts that have not yet been observed, that are capable of being contradicted by observation, and that subsequent observation does not contradict. In consequence, these defects are found in much economic theorizing that is not taxonomic in character. They are, however, especially likely to arise when the taxonomic approach is adopted, as their presence in the writings of so able and careful a theorist as Lange testifies.

A man who has a burning interest in pressing issues of public policy, who has a strong desire to learn how the economic system really works in order that that knowledge may be used, is not likely to stay within the bounds of a method of analysis that denies him the knowledge he seeks. He will escape the shackles of formalism, even if he has to resort to illogical devices and specious reasoning to do so. This is, of course, a poor way to escape the shackles of formalism. A far better way is to try to devise theoretical generalizations to fit as full and comprehensive a set of related facts about the real world as it is possible to get.

COMMUNICATIONS

National Budgets and National Policy: A Rejoinder

Dr. Mosak's paper in the March number of this *Review* strikes me as seriously misleading on questions of facts and analysis and still more so on questions of policy.

Facts and Analysis

The patience of the reader cannot reasonably be taxed by a detailed rejoinder to Dr. Mosak's detailed attack on my discussion of the magnitudes involved in the "models"; though a few points will come up, illustratively, below. His acuteness has picked up several oversights in my original article,[1] and at many points the reader who is interested in the in's and out's of model-building will find valuable interpretations and corrections. On the whole, however, my impression is that a careful audit will show that the main points of my article are not seriously shaken.

What deserves examination here is Dr. Mosak's exaggerated idea as to what can be "demonstrated" by the type of evidence he deals in. The most that can ever be said for a hypothesis in relation to a set of observations is that the observations have *failed to disprove it.* In some circumstances this is saying a great deal. If the hypothesis has behind it the weight of general professional knowledge because it is part of a well-integrated theoretical structure other parts of which are well tested; if the hypothesis is clearly formulated in terms to which the data are relevant; and if the data provide numerous opportunities for failure—on these conditions, survival after confrontation with observations justifies confidence in the hypothesis.

These specifications for confidence do not fit Dr. Mosak's "models." To illustrate, consider the hypothesis on individual savings implied by his "consumption function." The hypothesis his equations express is that savings (*i.e.*, the excess of disposable income over expenditure) are determined by the level in current dollars (without correction for either population or prices) of disposable income. This implies that a difference in income level reflecting prices and population has just the same effect on saving as one reflecting unemployment. There is no reason in economics why this should be so. On the basis of the so-called "money illusion," one could make sense of a hypothesis that year-to-year *changes* in saving are determined by year-to-year changes in disposable income, on an undeflated basis. But the "money illusion" rests on the notion that people remember their past

[1] The oversight I most regret, however, is one Dr. Mosak was too courteous to mention—the inadvertent omission of his name from the list of those whose criticisms helped in the preparation of my article. Dr. Mosak was generous not only with the use of unpublished materials, but with specific written criticisms, in the light of which I rewrote the article in a way which I (but not, I fear, Dr. Mosak) regard as a great improvement.

nominal incomes while failing to notice that the real meaning of the dollar has been altered by price changes. Over long stretches of time, when people in a given economic situation are no longer the same individuals who were in the corresponding situation earlier, a hypothesis resting on the money illusion is *prima facie* nonsense. Failure to deflate current-dollar figures thus involves refusal to put the economic records in a form which permits testing any meaningful hypothesis.[2]

Alleged Concessions on Points of Fact

Dr. Mosak is in error when he asserts that "the critics . . . concede . . . that the magnitudes estimated by the model-builders are the ones which prevailed in the pre-war period and . . . rest their case upon the assumption that the magnitudes will automatically change in the right direction in the postwar period" (p. 42). The sense in which these magnitudes "prevailed" is a very queer one. True, in year-to-year changes during the 1929–1940 period, both savings and business profits changed by large percentages of changes in income. But the question posed by the model-builders is what would happen with activity continuously high—a situation which did not "prevail" at any time in 1929–1940. It is proper to infer from the time-series of these years (and from supplementary data in budget studies, etc.) that both savings and profits *may be* very much larger proportions of income at high than at low levels of national output; but the inference that they *will be* stretches the evidence beyond endurance.

Tax versus *Expenditure Adjustment*

Dr. Mosak is of course correct that "the choice between an additional reduction in taxation or an additional increase in government expenditures can obviously be made only in terms of their relative marginal social utilities" (p. 26). But his inferences rest on the assumption that the only kind of "utility" in question is the effect on employment. Now if full employment is attainable by tax cuts or by expenditures which do not directly absorb resources (*i.e.*, transfer payments), the social cost of "exhaustive" expenditures is consumption or private investment displaced. The common sense of public expenditures is to carry them to the margin at which they are of equal social value with alternative private expenditures of equal amount, irrespective of revenues; revenues and transfer payments (together with monetary policy) can then be used to keep the economy at full employment. To assume that unemployment is the alternative use for resources absorbed by "exhaustive" expenaitures is to be defeatist on full employment in a sense; for the assumption can hold only if there is no route to full employ-

[2] Dr. Mosak brushes aside the suggestion that he introduce some relevance into his data by adjusting for changes in prices and population. Failure to deflate is sometimes justified by the contention that either deflated or undeflated data will give much the same regression coefficient for savings upon disposable income for 1929–40. This is true. But it does not follow that no errors can be introduced by failure to deflate. On a deflated basis the apparent correlation of savings with disposable income is substantially lower; and there is next to no correlation between the residuals of the two regressions. It is no wonder, therefore, that Dr. Mosak's experiments with explanatory variables other than disposable income were inconclusive: the warping of the data by failure to deflate pushed the relevant evidence out of sight.

ment other than "exhaustive" government expenditures which are not justifiable on their merits.

Primary reliance on expenditure adjustment, while defeatist on the "stagnation" front, is over-optimistic on the fluctuations front. Except for transfer payments directly linked to business conditions (notably unemployment compensation), government outlays cannot be changed significantly on short notice. Good timing of changes in outlays thus rests entirely on very accurate forecasts ranging a year or more ahead. The revenue side is full of opportunities for "built-in flexibility"; and the currently collected personal tax can be changed quickly enough to reduce greatly the required span of forecasting. In fact, a mechanical rule by which taxes now will always be those which hindsight showed would have been appropriate three months ago is likely to prove fairly satisfactory; whereas a rule by which expenditures would be those which would have been appropriate a year earlier (about the best one could do by applying such a mechanical system to public works) would very probably make fluctuations worse.

In short, primary reliance on expenditure adjustment implies a *forestalling* policy toward fluctuations—with maximum reliance on forecasting and maximum prospect of amplifying errors. Primary reliance on revenue adjustment permits a *wait-and-see* policy of correcting observed fluctuations before they go far enough to do damage. The contention that reliance on revenue adjustment means somewhat larger public debt, which seems to be Dr. Mosak's chief argument, is second-magnitude relative to greater promptitude in dealing with fluctuations and better allocation of resources between government and private use; furthermore, the public debt argument discounts the favorable effect on investment of lower taxes and the unfavorable effect on investment of aggressive and unpredictable expansions of the sphere of government operations.

Dr. Mosak's Policy Findings

Dr. Mosak, as I read him, wants the reader to believe (a) that the models prove that adequate private investment at full employment to absorb full-employment savings is not even possible, let alone "automatic," and will be lacking not only intermittently but continuously; (b) that the policy upshot is an anti-stagnation policy rather than an anti-recession policy embodied in an anti-fluctuations policy; (c) that the resulting "national policy must be directed toward changing the income and expenditure patterns so as to increase private expenditures for consumption and tangible investment." This last seems to mean that the primary function of taxes is to discourage savings, and incidentally that wage policy can be used to squeeze savings *via* profits.

I differ at all three points. There is of course no use supposing that the economy will "automatically" stabilize itself indefinitely at full employment. Indeed, it is certain that at some time in the visible future we shall have to cope with powerful recessive forces. But it is highly probable (though admittedly not certain) that, if we have an effective anti-recession policy, we can maintain private investment most of the time at a level that will absorb at least the bulk of full-employment savings.

In the second place, Dr. Mosak's contrast between having a policy of ameliorating fluctuations and having a full-employment policy is artificial. If we can devise a policy for keeping recessions from pulling activity more than 5 or 10 per cent below full employment, then we have a full-employment policy.

In the third place, if tendencies toward deflation prove so persistent that full employment can be approximated only by continuous government efforts at stimulation, the answer does not necessarily lie in the direction of repressing savings. In fact, it is distinctly probable that to make the repression of savings a major goal of policy—which means surrounding business management with an atmosphere of hostility rather than of social approbation—will impair investment and embitter politics to such an extent as to make the task of full-employment policy harder rather than easier.

The line of policy which I understand Dr. Mosak to recommend is defeatist in that it takes for granted the persistent inadequacy of private investment and suggests in consequence policy measures which are apt to make investment desperately unattractive to business. If the savings-investment relations are, in fact, such that the economy will work without drastic reconstruction, Dr. Mosak's policy involves wasting the opportunity implied. On the other hand, the line of policy I recommend will not prove disastrous if Dr. Mosak's pessimism about savings-investment relationships is justified by the event. The onset of "stagnation" after the transition must necessarily take the form of a recession. If we are armed against recession, we can afford to test out the intensity and persistence of the deflationary forces before we resolve to make a radical shift in our economic organization.

The "Models" and Transition Policy

However skeptical Dr. Mosak may have been, many government economists about V-J Day were prepared to apply the post-war models to the transition; and the late lamented forecast of 8 million unemployed in early 1946 was so derived. Better statistical work might have led to better forecasts from the same general methods and data;[3] and certainly the early transition period was a time when errors of forecasting were excusable. This failure does not show models analysis to be useless; but it points directly at dangers in their interpretation.

The forecast of a sharp slump in incomes and the need of stimulative rather than repressive measures in the monetary-fiscal field served to rationalize[4] what seem by hindsight to have been serious errors of policy in

[3] I have in my files a memorandum from Mr. Lawrence Klein of the Cowles Commission, received a few weeks after V-J Day, in which he deduces from models analysis a substantial inflationary gap for the 12 months ending June, 1946.

[4] Note that I do not assert that economists brought about these policy measures. Most if not all would have been adopted had economists been unanimously opposed, and several were in fact opposed by most of the economists whose work is in question. But the prognosis of income deflation removed the basis both for effective opposition to these measures and for retrospective interpretation of the record which might have salvaged educational value from

an inflationary direction: notably (1) the policy of pushing at once for sharp wage increases; (2) the termination of the accrual of excess-profits tax liability with the end of 1945 rather than of 1946; (3) inaction on the monetary front instead of action to bring the supply of money under control and to stabilize (rather than push down) interest rates; (4) a false start on public works; (5) suspension of food rationing; (6) a false start on decontrol in the housing field; (7) promises of supplies to foreign countries which proved inconsistent with decontrol; (8) failure to prepare the ground for a final extension of the Office of Price Administration in effective form. Into the bargain, the attempt to dramatize the Murray bill by talk of heavy immediate unemployment, rather than by calling for prudence in forestalling more remote troubles, may have wasted much of the educational value of the attempt to mobilize public opinion in favor of the bill.

What disturbs me about the record is not so much that the forecast was wrong as that the policy derived from the forecast was one of staking everything on one throw rather than hedging bets. If the forecast had been correct, nothing would have been lost by a wait-and-see policy on most of these fronts. Excess-profits-tax repeal effective at the end of 1946 would have given a solid foundation for business estimates; had more stimulation proved necessary, the effective date could have been advanced to the end of 1945 by retrospective action as late as February or March, 1946. Calling for adequate monetary powers would not have compelled their immediate use. Maintaining rationing and housing controls would not have prevented as much easing up as the objective facts (relative to the forecast of a slump in income) would have justified. In short, a line of policy could readily have been found which would have worked out almost as well as the policy adopted in the event that there was a serious transition slump and much better in the sort of situation which actually ensued. This experience and Dr. Mosak's article both suggest a discouraging lack of willingness among the economists whose work is under discussion to consider at what points and to what degree their forecasts are liable to error, and to look for policies which will work reasonably well even though some forecasts are erroneous. It is hard enough to persuade the layman that the economist has any special competence, without pretending that we have infallible answers where we obviously cannot have them.

ALBERT GAILORD HART*

* Visiting professor of economics, Columbia University, and research economist, Committee for Economic Development. Perhaps I should put unusual stress on the fact that I am expressing individual views rather than speaking for the Committee or its research staff, in view of Dr. Mosak's flattering attribution to me of the authorship of *Jobs and Markets*. While I am as fully prepared to accept responsibility for statements in that report (which embodies the unanimous findings of the six members of the CED staff who were its authors) as for any of my own writings, it does not follow that I am in any sense a spokesman for the organization.

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our experience. The doctrine of the "mixed situation," with deflation in general but a few tight spots, was not an adequate hedge; in fact, it invited the policy of reducing O.P.A. to operation in a very few fields.

National Budgets and National Policy: A Final Reply

In view of the earlier extended discussion I think it desirable to present as briefly as possible my coments on Dr. Hart's rejoinder. To facilitate references I shall adopt both his order of topics and his headings.

A. *Facts and Analysis*

1. Of course, an hypothesis cannot be "proved" by statistics, but can only be tested for consistency with the data. This is a basic proposition in elementary statistics and elementary logic, and I know of no occasion in which I have denied it.

2. The comments on my use of undeflated figures for the consumption function are a bit off the main track. Dr. Hart's original paper did not even contain a reference to this point, because it treated the model-builders as representing a common school of thought and attempted to deal only with those shortcomings which they were thought to have in common. Since the other model-builders had used deflated figures and had obtained results essentially similar to mine, this defect, if it be one, obviously could not be attributed to any "school."

As I have pointed out twice already, the conclusions derived from the models do not in any way depend upon the use of undeflated data. Smithies used deflated data and obtained an even lower estimate of the marginal propensity to consume than I did. Had I been interested in the consumption function *per se*, I might have used the deflated figures. Since my interest was only in the broader problem of the post-war prospects for full employment, I presented the simple money relationship as a first approximation when I saw that it did not significantly affect the conclusions with respect to the broader problem.

B. *Alleged Concessions*

1. As I pointed out in my previous paper, it is true, of course, that the pre-war relationships do not show the conditions that might prevail if the threat of unemployment were eliminated once and for all from our society. A society which does not have to worry about mass unemployment, about insecurity in old age, about risk of general business depression, might gradually establish much more favorable spending patterns and much more favorable price-wage relationships. The problem of maintaining full employment might, therefore, become smaller as the years go on. This does not mean, however, that the problem of establishing full employment and maintaining it in the first years after the present inflationary period will be an easy one.

2. Since the physical scientist would not even assert that the sun *will* rise tomorrow, but only that it is extremely likely that it will, the model-builders certainly would not maintain that savings and profits *will be* a larger proportion of income at high than at low levels of income. Their position is simply that, on the basis of the pre-war data, it is more reasonable to assume that they will than that they will not be. One takes along an umbrella not only when he *knows* but also when he *believes it likely* that it will rain.

C. *Tax* vs. *Expenditure Adjustments*

1. Despite the fact that Keynesians have been in the forefront in the fight for such measures as an expanded social security system, reduced interest rates, and reductions in excise and other taxes bearing on the low-income groups, and despite the vast Keynesian literature on the subject, Hart persists in his notion that Keynesians believe only government expenditures can increase employment.

In my last paper I made it clear that Hart was simply wrestling with straw men. That did not, however, end the sport. After quoting and approving my statement that both government expenditures and tax reductions will increase employment and that the choice between them depends on their relative marginal social utilities, he turns right around and states that we assume there is no route to full employment without government expenditures. Indeed he now interprets such government expenditures to exclude transfer payments and implies we favor government expenditures on goods and services which are not justifiable on their merits.

The following statements are made to avoid the possibility of further misinterpretation:

a. In an unemployment situation, *any* measure which tends to increase either private consumer expenditures or private investment or government expenditures on goods and services more than it tends to decrease them contributes to an increase of employment. This includes, among others, tax reductions, government transfer payments, and exhaustive government expenditures whether or not they are justifiable on their merits.

b. The choice between different measures for achieving full employment can be made only in terms of their relative marginal social utilities.

c. Much opinion to the contrary (Hart's apparently included) notwithstanding, Keynesians are not in favor of government expenditures, exhaustive or otherwise, which are not justifiable on their merits. There is no shortage of alternative measures which are justifiable.

2. Hart makes an important contribution to policy in emphasizing the need to consider the speed with which any program can be adjusted to meet changing conditions. So far as I know, no model-builder stated his position on the question whether government revenues or government expenditures can be more speedily adjusted. For myself, I am not nearly so certain as is Hart that only the revenue side provides opportunities for "built-in flexibility." To take but one example, I wonder if he is not discounting too heavily the degree of "built-in flexibility" involved in the proposal of Dr. E. A. Goldenweiser that the government put on its payroll any man who loses his job in private industry.

D. *Policy Finding*

1. The model-builders do not believe and have never stated that adequate private investment to absorb full employment savings is *always* impossible. Their position is that, with low federal expenditures, private investment is likely to be inadequate to maintain full employment *on the average* over a period of years. In some individual years, of course, it may be not only

adequate but even excessive. The question at issue is simply whether in the absence of a national policy, business fluctuations would take place around a trend of full employment or one of substantially less than full employment.[1]

2. The term "anti-stagnation policy" may be open to misinterpretation. Stagnation is probably associated in many minds with a falling, or at best a constant, volume of output. Even in the absence of a national full-employment policy, however, post-war output will probably be considerably above pre-war levels and will probably have a rising trend. In a sense we did not "stagnate" even in 1940 as compared to 1929, since output and productivity were substantially higher in 1940. We did, however, suffer from an enormous waste of human resources and potential output.

What we need for the post-war period is not an anti-stagnation policy but a full-employment policy. And I do not agree that we have a full-employment policy if we keep recessions from pulling activity 10 per cent below full employment. Six million unemployed does not represent full employment.

The difference between ironing out a cycle about a level of full employment and eliminating the danger of long-lasting periods of unemployment is not as artificial as Hart would now make it appear. In the first case we are likely to feel that the solution lies in some such simple formula as "built-in flexibility" of taxes. In the second case, however, we shall concern ourselves primarily with such measures as a greatly expanded program of social security and provision for adequate housing, adequate hospital care and adequate education. We shall support more Tennessee Valley Authorities, slum clearance, and urban redevelopment. If Hart favors such programs then we are in agreement. If, however, he opposes such programs on the grounds that they "are not justifiable on their merits," or "repress savings," or "mean surrounding business management with an air of hostility," or "are defeatist on full employment," then we are in disagreement.

3. The belief that repression of savings is a major goal of Keynesian policy is another sterotype which it would be well to eliminate in the interest of clarity. The goal is an increase in consumption and investment adequate to maintain full employment, not repression of savings. If incomes are increased, consumption will rise without a repression of savings; in fact, savings will rise at the same time. It may be necessary to reduce the *proportion* of the gross national product that is saved. It does not follow, however, that the *aggregate* volume of savings will necessarily be lower.

E. *The Models and Transition Policy*

This is not the time or place to enter into a detailed discussion of the transition period forecasts. As I pointed out in my previous paper, the models

[1] Incidentally, Hart has now apparently so hedged his own position on the long-run outlook as to make it almost impossible for the model-builders in question to disagree with him. Thus he writes: "But it is highly probable (though admittedly not certain) that if we have an effective anti-recession policy we can maintain private investment most of the time at a level that will absorb at least the bulk of full-employment savings." If this means (a) that most of the time it will not absorb the difference between all and the bulk of full-employment savings, and (b) that the rest of the time it will not absorb even the bulk, then I think Hart should support the model-builders rather than oppose them.

which Hart criticized were explicitly confined to the post-transition period.

The transition forecasts were indeed seriously in error. It is important to emphasize, however, that these forecasts were based not on the post-war models as such but on an important modification of them. The post-war models yield estimates of *total* consumer expenditures at varying levels of disposable income when all goods and services are freely available. In making the transition forecasts, however, account had to be taken of the many shortages, particularly in durable goods and services. On the basis of the wartime experience alone, it was assumed that consumer expenditures would not spill over into goods that were available, and it was estimated that *consumer expenditures would be below normal post-war expectations to the extent that there were shortages.*[2]

This did not happen. Instead, consumer expenditures on non-durable goods rose very sharply after V-J Day, yielding, despite the shortages, a total volume of consumer expenditures about equal to what would be expected from the post-transition models. It is this increase in consumer expenditures on non-durables which is primarily responsible for sustaining the high levels of gross national product and of employment.[3]

It is still too early to determine whether this increase in consumer expenditures on non-durables is a temporary transition-period phenomenon or a relatively permanent one. If it is permanent, it will make a very great contribution toward solving the problem of post-war unemployment. If, on the other hand, it is essentially a temporary phenomenon, attributable to such factors as (a) the influx of veterans, (b) the volume of capital gains (both realized and unrealized) resulting from the increase in stock market prices and in real estate values, (c) the shortages of durable goods, (d) the elimination of wartime restraints on consumption, and (e) anticipations of price in-

[2] Some upward adjustments were made in the expenditures on non-durables to allow for the effects of returning veterans, the volume of cash balances, and the general relaxation from wartime conditions. These allowances, however, were quite small relative to the downward adjustment for shortages discussed in the text.

[3] Several other factors contributed to the difference between the actual results and the projections.

a. The projections were explicitly based on the assumption of no increase in wage rates above wartime levels, whereas wage rates were increased substantially and, of course, contributed to an increase in both disposable income and consumer expenditures. This factor represents not an error in forecasting but a difference in policy assumption.

b. There was a very strong lag between the decline in production and the decline in employment in factories experiencing cutbacks of war production. In large part this was attributable to the fact that the excess profits tax was repealed shortly after V-J Day, effective as of January, 1946. This action encouraged producers to concentrate as much of their expenditures as possible during the period when the excess profits tax was still in effect and to keep their labor force relatively intact. Aside from the effect on labor income it probably had a very powerful psychological effect in sustaining consumer expenditures.

c. Private capital formation, particularly construction, was underestimated. This error was more than offset, however, by the overestimate of federal expenditures. The fact that construction was higher than was estimated is attributable, among other things, to the government construction program and to the sharp rise in construction costs, both of which were not assumed in the estimate.

creases, then the problem of sustaining post-war full employment after this inflationary period will remain quite great.

JACOB L. MOSAK*

* The views expressed in this note are the author's own personal opinion and do not necessarily reflect those of the Office of Economic Stabilization.

I wish to thank Mr. Alfred Sherrard for his helpful suggestions.

The Maintenance of Full Employment after the Transition Period: Notes on Mr. Kalecki's Models

" . . . the solution of the problem of employment after the transition will require a much more unorthodox policy in public finance in the United States than in the United Kingdom.

" . . . it is true that the budget deficit necessary for the maintenance of full employment in the United States may be diminished by a variety of factors. . . . But it seems unlikely that all these factors would enable the United States to maintain full employment after the transition period without a substantial budget deficit. . . . "

This is the gist of Mr. Kalecki's article on "The Maintenance of Full Employment after the Transition Period," which appeared recently in the official organ of the International Labour Office.[1] More specifically, the article suggests that full employment in the United States in 1950 presumes a budget deficit of 13 billion dollars and an export surplus of 2 billion dollars[2] or some other combination of deficit spending and export surplus totaling 15 billion dollars. Although the arguments of the article are not more original than its conclusions, it deserves attention for three reasons: first, because it appears under the sponsorship of an influential international organization; second, because it is typical of an economic school that was fairly influential in Washington until its forecasts were exposed to the test of checking with facts; third, because it appeared after this embarrassing test had been completed.

The reasoning of the article rests on the well-known observation that the net national income may be represented in two ways: either as a sum of personal consumption, public expenditure for goods and services, net private investment, and export surplus; or as a sum of personal consumption, taxes available for public expenditure for goods and services, and savings. Subtracting private consumption and taxes from both aggregates, one finds that, apart from minor adjustment factors, savings (S) must equal the sum of net private investment (I), export surplus (E), and budget deficit(D).

From the tautological formula ($S=I+E+D$) other equations showing the relationship between the same four items may be deduced, all equally tautological and none providing any insight into the mysteries of the modern economy. If, however, these harmless formulas are combined with definite assumptions concerning economic trends, they take on a prophetic

[1] *International Labour Review*, November, 1945, pp. 449–64.

[2] *Ibid.*, p. 460.

quality. Assuming, for example, a balanced government budget, a rising export surplus would presume a widening gap between savings and private investment and forecast an increase in savings, or a decline in private investment, or both. Assuming a balanced foreign trade and a constant rate of investment, one would predict that savings would rise or fall with the budget deficit. Of the several dozen formulas of this kind, one has become especially popular in recent years: $(S-I=D+E)$, the sum of budget deficit and export surplus equals the difference between savings and net private investment. The success of this formula is based on the implicit postulate that in the modern economy the amount of savings (S) tends to outrun investment (I) and that the widening gap between the two items $(S-I)$ condemns the economic system to deflationary contraction, unless special measures are taken to check this danger. If this postulate were correct, the conclusion would be inescapable: To prevent mass unemployment, the gap $(S-I)$ should be bridged by deficit spending by the government (D) or export surplus (E), or both $(D+E)$. The crucial question is whether the postulate *is* correct.

Mr. Kalecki displays a series of "models" of distribution of the national product. First, he shows comparative pre-war models for the United States (1940) and the United Kingdom (1938). In these models the United States, with a net national product of 87.8 billion dollars, has an export surplus of 1.5 billions and a budget deficit of 1.5 billions, while the United Kingdom, with a net product of £5.2 billion, reports an export surplus of £70 million and a budget deficit of £220 million. The sum of both items amounts to 4 per cent of the net national product for the United States and to 3.4 per cent for the United Kingdom. Although this trivial disparity falls within the margin of error of the two computations, Mr. Kalecki considers it sufficient to justify a far-reaching conclusion: "The main difference in the structure of the national product in the United States and the United Kingdom is seen to be the higher percentage of income saved in the former country at the same level of employment. . . . The problem of employment is more difficult in the United States than in the United Kingdom because the percentage of income saved at the same degree of employment of the available labour force is substantially higher; and because this percentage is not normally offset by a correspondingly higher ratio of private investment plus export surplus to incomes."[3]

Obviously one can neither accept nor reject these conclusions on the basis of such insubstantial evidence as two sets of not strictly comparable figures, without any analysis of the economic structure of the two countries and business conditions in the selected years. This is, however, characteristic of the article: it draws far-reaching conclusions from casual, irrelevant figures.

This characteristic becomes still more pronounced in the second part of the article, which shows the hypothetical post-war patterns ofdistribution of the national product in the two countries, on the assumed full-employment level. The model for the United States in 1950 suggests a net national

[3] *Ibid.*, p. 457.

product of 178 billions at 1943 prices, personal consumption of 127 billions, and taxes of 26 billions. The balance of 25 billions represents savings and is offset by the aggregate of net private investment (10 billions), export surplus (2 billions) and budget deficit (13 billions). On the other hand, the model for the United Kingdom in 1951 shows only a small budget deficit (£150 million), due essentially to public outlays for residential building.

One will recognize that the sweeping conclusions quoted above are inescapable if these "models" are correct. In fact, the conclusions are hidden in the models, like a white rabbit in the hat of a magician. Therefore, Mr. Kalecki should have proved that the people in the United States will put aside 25 billion dollars in 1950 while the nation needs only 10 billions for net investment. Instead of any proof he refers simply to an earlier article of Mr. Arthur Smithies on "Forecasting Post-War Demand," an essentially mathematical article in which general methodological considerations were illustrated by a series of tentative, deliberately experimental projections.[4] Whether valid or not,[5] these projections reflected a definite phase of the discussion which was in progress at that time among technicians in the United States but were not intended to serve as a prophecy. In Mr. Kalecki, however, these casual figures become a prediction of the economic structure of post-war America and the foundation—the sole foundation—of the policy it should follow to maintain full employment!

Let us examine the assumption of an over-saving of 15 billion dollars in post-war America. History shows that, except during wars and deep depressions, savings in the United States averaged somewhat less than 10 per cent of the national income and were roughly in balance with its demand for new capital. If this pattern should change drastically in post-war America, there must be some reasons for such a change. What are these reasons? Will veterans returning home from foxholes lose their "propensity" for decent dwellings, and will building construction stop? Will the nation shift to the austere consumption habits of the eighteenth century? Will people move from cities to rural areas, strongholds of thriftiness and saving? Will technical progress be brought to a standstill?

None of these assumptions seems very probable. Observations point rather to very different trends. New, higher consumption habits were acquired by workers during the war boom. New habits were brought back to the country by returning veterans. The tide of marriages and births resulted in an unprecedented demand for new homes, a demand which cannot be satisfied in three or five years. The deferred demand for durable goods and accumulation of war savings open new markets for production. The new technology of light metals and plastics and the progress of electronics generate new outlets for investment. The progress of aviation makes urgent the task of adjusting our urban areas to the new means of transportation. The huge financial reserves of business concerns, farmers, and public

[4] *Econometrica*, January, 1945.

[5] For a criticism of Mr. Smithies' regression formula, see W. S. Woytinsky, "Relationship between Consumers' Expenditures, Savings, and Disposable Income," *Rev. Econ. Stat.*, February, 1946.

agencies make private construction and public works possible on a scale never dreamed of before. The United States has emerged from the war as the first economic power in the world. The state of international security demands considerable outlays for defense. The nation is facing a tremendous expansion of individual and collective consumption and spending.

On the basis of a similar appraisal of the prevailing trends in our economy, I have ventured in another article[6] to make a tentative projection of the distribution of a Gross National Product of 150 billion dollars, at 1941 prices, in 1950 on the full-employment level. In this projection I have estimated current savings of individuals in 1950 at 9.9 billions and those of corporate business (undistributed profit) at 2.3 billions. At the same time, I assumed that 4 billions of war savings will flow back into consumption, leaving a net saving of 8.2 billions. If net investments in 1950 are estimated conservatively at 10 billions,[7] this amount of net savings will be 1.8 billions short of the demand for new capital, the total demand for consumer and capital goods will exceed the current output, and the general economic condition in the United States will be inflationary rather than deflationary.

Here are two widely divergent patterns of economic life in post-war America. Which is more realistic? Which forces will dominate the economic scene after the war—those of deflationary contraction or those of inflationary expansion?

A similar controversy on the course of reconversion has been solved by experience. The progress of the reconversion has revealed how unwarranted were all the predictions that a deflationary spiral and mass unemployment would follow the cessation of military expenditures. This does not, of course, exclude the possibility that predictions of deflationary gap after the reconversion may be right. The point to be stressed here is that the controversy in interpreting historical trends cannot be solved by tricky "models" which postulate in advance a definite pattern of development. If we know what our economy will be in 1950, we can easily represent it by a "model"; but as long as the future is uncertain, the "models" based on casual or biased postulates serve no other purpose but to perpetuate superstitions and disseminate false notions.

In fact, the difficulty of developing economic projections for post-war America or any other country is not in picking up a set of figures totalling the anticipated national output, but rather in appraising the long-range repercussions of the war. Was this war only a temporary deviation from the secular trend as manifested in economic conditions in the 1930's? Or will it become the starting point of a new economic cycle analogous to that launched by World War I? In other words, do we reconvert to an economic phase similar to that of 1920, or analogous to that of 1940?

The means useful for maintaining full employment in post-war America will be determined by the post-war economic conditions. If the United States

[6] "Postwar Economic Perspectives III, Prewar Experience: Production and Consumption," *Social Security Bulletin*, February, 1946, p. 14.

[7] In my projection, the "business share" in the Gross National Product is set at 19 billion dollars, including 9 billions for business reserves, depreciation charges, and the like. This leaves 10 billions for net investment.

is returning to the "normalcy" of 1940, prophets of deficit spending may prove to be right. If the nation is entering a long era of post-war expansion with periodically recurring set-backs in business conditions, it will need a different, much more flexible economic policy. The practical task will be, in this event, to find the proper selection, timing, and dosage of remedies designed to correct excessive up's and down's in employment. The danger will be in overdoing the treatment of the actual ailment as it has been overdone too often in the past. Using the words of Keynes, it is "as though the family were to go on giving a child successive doses of castor-oil every ten minutes until the first dose had done its work. Or—to take a better parallel—it is as though different members of the family were to give successive doses to the child, each in ignorance of the doses given by the others. The child will be very ill. Bismuth will then be administered on the same principle. Scientists will announce that children are subject to a diarrhoea-constipation cycle, due, they will add, to the weather, or, failing that, to alternations of optimism and pessimism amongst the members of the family. If the time taken by the first dose to act is constant, they will discover that the cycle is a true one with a constant period. Perhaps they will suggest that the remedy is to be found in giving the child bismuth when it is constipated and castor-oil at the other extreme. But more probably the parents will divide into bismuth and castor-oil parties, one of which, impressed by the horrors of diarrhoea, will renounce castor-oil, and the other, moved by the depression of constipation, will abjure bismuth."[8]

Disregarding these wise warnings of Keynes, his followers propose to cure all the evils with one medicine—the castor-oil of liberal compensatory spending. Since they have no other prescription in their books and no other medicine in their bag and know in advance what they are going to administer to the patient, they do not need to waste time in examining him, observing the symptoms of his ailment, or studying his constitution, disposition, and environment. The procedure is simple: Get the patient to open his mouth wide and make him swallow as much of the salutary medicine as can be forced into him. This is the economic philosophy of the article under discussion. That the post-war United States will be economically ill and in need of a good dose is taken for granted. The only problem is how to make the prospective patient open his mouth wide enough to absorb 15 billion dollars a year. The article performs this operation with commendable fervor and courage, and with no false pretense of having based the remedy on a study of actual conditions and trends in post-war America.

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Correlations and Forecasting

The passage of the Full Employment act has transformed model-building and forecasting into a public function. Economists' suggestions will doubtless receive a good deal more attention, favorable and otherwise. Perhaps

[8] J. M. Keynes, *A Treatise on Money; The Applied Theory of Money* (London, 1930), Volume II, pp. 223–24.

the most ambitious discussion of forecasting has appeared in this *Review*[1] and some of its findings have been cited in the well-known symposium on *Financing American Prosperity*.[2] Unfortunately, it contains serious errors.

1. Although the discussion is entirely in terms of quarterly changes, the quarterly "predicted" gross national product is never shown; even the annual "predicted" gross national product appears only on a small-scale chart. Picking off some values here as best we can, it appears that for 1923, 1934, 1935, and 1938, "predicted" and actual changes from the previous year were respectively about 27 and 17 per cent; 31 and 16 per cent; −5 and +10 per cent; +3 and −8 per cent. These are sizeable errors and involve four years out of nineteen. Moreover, since comparison of annual data removes three-fourths of the opportunities for differences between "predicted" and actual; since both are in terms of current dollars and alike affected by the great price movements since 1921; and since secular trend is the same,[3] much of what correlation does exist is, on the face of it, simply spurious.

2. Of the two independent variables, the more important (by 50 per cent) is a quarterly profits series of which "the third quarter of the previous year [was] weighted once; fourth quarter weighted three times"(p. 74). When planning operations, that is, for a certain quarter Q_3 business men will be influenced by the record of profits realized in Q_2 three times as strongly as by the record of Q_1; they will not be influenced by anything else. In the business world, however, the record of Q_2 will not be available until Q_3 is well under way. (The statistician would begin to "forecast" Q_3 when he was in Q_4!) Physically, therefore, the hypothesis is at least half untrue. Moreover, the original data show profits failing to lead GNP either in 1929 or 1938.[4]

3. The naïveté of treating "profits" as a unitary phenomenon is astonishing; the aggregate or average of profits is a summary expression for many separate and often divergent influences.[5] Dispersion among industries[6]

[1] Stanley Lebergott, "Forecasting the National Product," *Am. Econ. Rev.*, Vol. XXXV, No. 1 (March, 1945), pp. 59–80.

[2] P. T. Homan and F. Machlup, editors (New York, Twentieth Century Fund, 1945), p. 417n.

[3] Tinbergen's model is supposedly being followed here, but the use of a least-squares trend, and deviations therefrom, "was felt to be undesirable in the present instance" (p. 73). No further explanation is offered.

[4] Harold Barger, *Outlay and Income in the United States* (1942), p. 136.

[5] Raymond T. Bowman, *A Statistical Study of Profits* (1934), especially pp. 136, 139; 141, where it is demonstrated that even concentration around the mean does not make it representative in this instance.

[6] Ralph C. Epstein (asst. Florence M. Clark), *Industrial Profits in the United States* (1934): "Actual profit rate in different industries manifest little tendency to become equal" (p. 579); "differences exceeding 100 per cent between the *average* profit rates earned by considerable groups of corporations" persist "over a full decade" (p. 587). Moreover "general averages at best give only a notion of the 'general drift' and the 'general drift' of all industries averaged together may in some respects be not the drift of the most important industries at all" (p. 589). In any attempt at public regulation or control, "no general average figures will suffice" (p. 588).

is as wide and persistent as among size-groups,[7] and "differences in [cyclical] timing " appear among both.[8] Most simply: if the several members of a crowd push in various directions, the crowd as a whole is not exerting any decisive pressure in any one direction. Quarterly changes[9] in a profits *average* are of such doubtful meaning that even a "significant" correlation tells us little except that they tend to vary directly with business activity—which is plausible but not exactly novel.

4. Even in the individual firm, where no averaging problems are involved, profit is anything but definite. The Treasury's calculation differs from the corporation's.[10] It is an axiom among accountants that income is a matter of judgment;[11] that even if determinate it cannot be exactly allocated to the appropriate short period.[12] Furthermore, windfall (capital) gains and losses, properly chargeable to surplus, must be eliminated from the income account if it is to reflect the normal operations of the business and furnish a clue to the future; yet corporate practice, in this respect, approaches chaos.[13] The depreciation charge "rarely has any actual relationship to any actual wear and tear . . . [and is] more often concerned with tax considerations than with actual facts. . . . Practically all depreciation charges have been excessive."[14] High or low, the arbitrariness of the charges intro-

[7] William Leonard Crum, *Corporate Size and Earning Power* (1939).

[8] *Ibid.*, p. 161. Barger, *op. cit.*, pp. 136 and 146, points out that during the depression there were "marked contrasts" among various industry trends; at the "turning point in 1932–33, there appears to be considerable dispersion."

[9] Apparently (it is difficult to make sense of the explanation) no seasonal adjustment was made for years after 1938, although Barger, in making estimates for 1922–38, did find it necessary to make them.

[10] See J. Franklin Ebersole, Susan S. Burr, and George M. Peterson, "Income Forecasting by the Use of Statistics of Income Data," *Rev. Econ. Stat.* (November, 1929): "The *statistics* of *income* are merely . . . data collected incidentally in assessing . . . federal taxes. . . . The first consideration has been revenue, and consequently the proper requirements . . . for tabulating significant data have frequently been sacrificed" (p. 171). "For 104 industrial corporations . . . the total net income shown in returns with the same names was 90.2, 87.3, 85.9, and 90.0 per cent, respectively, of the total published profits for the years 1923–1926" (p. 178 n2). The tabulation and classification procedures of the Bureau of Internal Revenue have improved very greatly since then, but the basic qualifications remain. The spread between published and taxable income is probably greater and more erratic today.

[11] For example, Accounting Research Bulletin No. 13, of the American Institute of Accountants, as printed in the *Journal of Accountancy* (February, 1942), pp. 155*f*.: "While many items in financial statements are determinable with substantial accuracy, others involve estimate or approximation and require the exercise of informed judgments within a comparatively wide range of reasonableness. There is increasing recognition of the fact that the significance of periodic financial statements is limited accordingly." For a sample study of discrepancies, see Howard C. Greer, "What Are Accepted Principles of Accounting?" *Accounting Rev.* (March, 1938), pp. 27–28.

[12] Witness the present discussion in the accounting journals concerning allocation of war and reconversion costs.

[13] William W. Werntz (chief accountant, S. E. C.), "Trends in Accounting," *Jour. Accountancy* (January, 1946), pp. 36, 37. See also Norman S. Buchanan, "Toward a Theory of Fluctuations in Business Profits," *Am. Econ. Rev.*, Vol. XXXI, No. 3 (Sept., 1941), p. 751.

[14] Harry E. Howell, "Postwar Pricing and Cost Accounting," *NACA Bulletin* (November

duces the same element into the income statement. The same is true, *mutatis mutandis*, of inventory valuation; "fifo" *vs*. "lifo" is an unresolved issue in practice and theory,[15] and even the venerable "lower of cost or market" is questioned.[16] By no means least important is the element of user cost, which "cannot be read off a cost accounts sheet. . . . Quantitatively vague and imprecise, [it] is definitely present in the entrepreneural mind."[17] The point need not be labored further: it is clear that the the profit of any given firm in any given period is no uniquely determined amount, or even an approximation thereto. The host of qualifications and interpretations in the minds of those most closely concerned convert the "profit" into a rather nebulous thing that has no necessary resemblance to the precise-looking figure on the income statement. The easy assumption of mutual cancellation of errors is unsatisfactory; a little reflection shows that the elements of "judgment" are far more likely to point all in the same direction.

5. Government expenditures on durables and on "all other" are separately plotted against GNP; "the values of the regression coefficients then indicated the relative weights to be assigned to each" (p. 75). The weights are not revealed. The division is completely arbitrary; there is no reason to regard purchase of durables as (more? less?) potent than any other sort of purchase;[18] the data are simply being rigged to look better. The profits series is weighted 1.5 times the total of government expenditures, which may be analytically justified or not; apparently there was no need felt for such analysis.

6. The basis for all the statistical manipulation is a dynamical model akin to that of Tinbergen.[19] Payments to individuals (which, let us note, are part of GNP) determine consumer expenditures (p. 69); the latter, like investment, is a "dependent function" (p. 70). "We may infer profits fairly well from consumption alone. . . . But given a value for profits, we can immediately infer a value for future levels of employment, payroll disbursements, and also for gross product" (p. 70). The terms in the estimating equations are all positive. Accordingly, an increase [decrease] in GNP will be followed by an increase [decrease] in consumption, will be followed by an increase [decrease] in profits, will be followed by an increase [decrease] in

15, 1945). Lewis Kimmel, *Depreciation Policy and Postwar Expansion* (1946), pp. 24–26, agrees as to the indeterminacy of the depreciation charges but would maintain, I think, that they tend to be too low rather than too high.

[15] For a recent statement of the controversy, see K. Lacey in *Economica* (February, 1944); and Harry Norris, *Economica*, (August, 1945).

[16] See George R. Husband, in the *Accounting Review* (April, 1946).

[17] P. T. Bauer, "Notes on Cost," *Economica* (May, 1945). Bauer presents not only a lucid summary of the theory, but an illuminating application to the Malayan rubber industry.

[18] Paul A. Samuelson, "Fiscal Policy and Income Determination," *Quart. Jour. Econ.* (August, 1942), pp. 599–600.

[19] As a matter of fact, the model is very similar to Tinbergen's "example II, [which] only contains a theory of the cumulative process," and not "a theory of the cycle. . . . It cannot explain a turning point." Jan Tinbergen, "Econometric Business Cycle Research," *Rev. Econ. Stud.* (February, 1940), pp. 84, 85.

GNP, and so on indefinitely. The circle is complete; it is impossible for any reversal ever to take place. The national product either rises continuously or falls continuously; it never fluctuates. Comment on this theory would be superfluous.[20]

7. Past profits, dimly and belatedly revealed, may condition the state of business confidence, but their influence on expectations of future profits is swamped by that of very palpable changes in costs, prices, and sales. Economists of widely divergent opinions have pointed to increases in factor prices, resulting in sharply disappointed profit-expectations, as the proximate cause of the downturn.[21] An explanation of unexpected decreases in sales would be an explanation of the business cycle. The traditional division of goods as durable or perishable, producers' or consumers', etc., and the rich discussion over the acceleration principle, stem from the search for those industries which initiate, or at least foreshadow, general movements through changes in their demand for the products of other industries.[22]

8. Not past average rates of profit, but expected marginal rates, will direct new investment. Maximized revenue is not an inducement to expand. In effectively monopolized markets, the entrenched happy few will guess at their demand curves and stand pat.[23] Investment sufficient to offset saving will not necessarily be made even when profits, as a principal source of savings, are very high. This hardly promises prosperity.

9. A single "horrible example" does not discredit econometric methods in general. But it does serve as a useful reminder that economic research is not—altogether—a matter of manipulating numbers and drawing lines on

[20] Writing 29 years ago, J. M. Clark said of Wesley Mitchell's *Business Cycles* (1913) that it "rendered obsolete all attempts to explain crises in terms of any one fact or any one narrow chain of causes and effects."

[21] For general discussions, see Wesley C. Mitchell, *Business Cycles and Unemployment* (1923), pp. 11–14; and *Business Cycles* (1927), pp. 106–07; Gottfried von Haberler, *Prosperity and Depression* (1940), pp. 106–10, 353–54, 456–61; Maurice Dobb, *Political Economy and Capitalism* (1937), pp. 102–04; Friedrich A. Hayek, "Price Expectations, Monetary Disturbances and Malinvestments," in *Readings in Business Cycle Theory* (1944), p. 360.

Also Sumner H. Slichter, "The Downturn of 1937," *Rev. Econ. Stat.* (August, 1938): "The downturn occurred while profits were still rising. In other words, business men reduced their estimates of profits on new commitments while profits on old commitments were growing. Obviously, it is the expected profits on new commitments which are decisive in determining business activity" (p. 108).

[22] J. M. Clark, *Strategic Factors in Business Cycles* (1934). See pp. 91–92 and p. 188, par. (3) for a discussion of profits as dependent on divergent cost and price movements during a boom.

[23] See Norman S. Buchanan, "Anticipations and Industrial Investment Decisions," *Am. Econ. Rev.*, Vol. XXXII, No. 1 (March, 1942), suppl., p. 154. Buchanan shows that the more fully competitive the market, and the easier the estimation of additional gross income, the more incentive will there be to buy expense-reducing equipment. See also TNEC Monograph No. 12, "Profits, Productive Activities, and New Investment," by Martin Taitel, p. xix: "Factors other than the amount or the rate of profit have been the major determinants of the level of capital expenditures of groups of companies in the same industry, and, hence, of business as a whole. Of these other factors, the most important have been the level of output in relation to capacity and the pressure upon business for the introduction of available new technologies."

paper. Some attention to the real world is helpful—perhaps even essential. And the manipulation ought not to flout the elementary rules of logic.

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Recent Activities of Soviet Economists

During the years of World War II, Soviet economists, like their colleagues in the United States and Great Britain, concentrated the great bulk of their energies upon problems connected with different aspects of the war effort. This activity encompassed not only all aspects of the internal economy of the U.S.S.R., but was also directed at understanding developments in the economies of all major foreign nations, with some particular stress in the last two years upon efforts being made to secure international cooperation in various economic fields such as finance, trade, agriculture, labor, etc.[1]

During the past two years, Soviet economists concentrating upon problems of the internal development of the U.S.S.R. have been engaged primarily in planning the restoration of devastated areas in the Soviet Union and charting the future economic development of their country. Much of this work has been done by personnel of Gosplan (the State Planning Commission) and the Institut Ekonomiki (Institute of Economics of the Academy of Science of the U.S.S.R.), as well as by economists attached to various other governmental organs. The most important results of this activity were embodied in the Fourth Five Year Plan adopted by the Supreme Soviet of the U.S.S.R. in March, 1946.[2] Considerable research and planning have apparently also been done on the longer range economic development of the U.S.S.R.[3]

Soviet economists concentrating upon the study of foreign economies and of international economic trends have served their country in the military governments which have been set up for the areas occupied by the Red Army; in the negotiation of trade agreements with Rumania, Poland, Finland, Argentina, Iceland, Bulgaria, and other countries; as advisers to Mr. Molotov in the meetings of the Foreign Ministers of the leading powers among the United Nations; and as representatives of or observers for the U.S.S.R. at the meetings of various international organizations such as U.N.R.R.A., F.A.O., the International Bank and Fund, etc.

[1] This paragraph is based upon a number of conversations engaged in by the author with Soviet economic personnel he met in Berlin during the summer of 1945. *Cf.* also Akademiya Nauk Soyuza SSR, *Referaty Nauchno-Issledovatelskikh Rabot za 1944 g. Otdeleniye Ekonomiki i Prava* (Papers on Scientific Investigations in 1944, Division of Economics and Law) (Moscow, 1945), pp. 3 and 4; and "Raboty Instituta v Gody Voiny" (Work of the Institute in the War Years), *Mirovoye Khozyaistvo i Mirovaya Politika* (World Economics and World Politics), No. 12 (Dec., 1945), pp. 82–86.

[2] The complete Russian text of the Fourth Five Year Plan has appeared in, among other places, *Pravda* and *Izvestiya*, March 21, 1946; and *Bolshevik*, March, 1946. An English translation was serialized in the *Moscow Daily News*, March 23, 27 and 30, 1946, and has been published in pamphlet form by the Soviet Embassy in Washington.

[3] *Cf.* the goals for 1960 mentioned in Stalin's speech of February 9, 1946, *New York Times*, February 10, 1946.

While the reports prepared by Soviet economists for the guidance of their nation's policy makers are naturally not available, much information about current economic research can be learned from a perusal of recent published writings. This includes a considerable literature consisting of books, pamphlets, and articles in magazines and newspapers. Little of this is generally available to private American citizens since much of the published output of Soviet economists is apparently not sent to the United States, or so few copies are sent that only a few specialists are able to obtain the material. The only source of supply for books is the Four Continents Book Store at 255 Fifth Avenue, New York City; and this store is prevented by law from sending material through the mails. Varying amounts of recent original Russian materials are available at the Library of Congress, the New York Public Library, Columbia University, and the American Russian Institute in New York City.[4] Attempts to build up such collections are now being made at Harvard and Syracuse universities. Obviously, for the student who is not located in or near Washington or New York, recent Russian materials are extremely difficult to obtain.

In view of the scarcity of the original materials in this country, it seems useful to present a short bibliography of significant recent economic writing in the U.S.S.R. Among the major studies written in the U.S.S.R. during the last two years are the following (some of the studies below were only in manuscript at the time the most recent information became available):

SOVIET ECONOMICS AND ECONOMIC THOUGHT

1. *Ekonomicheskaya Pobeda S.S.S.R.* (Economic Victory of the U.S.S.R.), Moscow, 1945. Issued by the Institute of Economics of the Academy of Science of the U.S.S.R. under the direction and editorship of S. G. Strumilin, P. A. Khromov, N. A. Kovalevski, I. D. Laptev, and D. I. Chernomordik.

   Contains chapters by different authors reviewing war time developments in Soviet industry, manpower, productivity, agriculture, transport, trade, and finance.
2. *Ocherki Istorii Russkoi Ekonomicheskoi Mysli* (Essays on the History of Russian Economic Thought). Issued by the Institute of Economics under the editorship of P. A. Khromov and I. D. Udaltsov.

   This is to be a four-volume work tracing the history of Russian economic thought from the ninth to the twentieth century. The first volume, which is believed to have been issued in 1945, traces the development from the ninth to the middle of the nineteenth century and has five sections:
   (a) General character of the development of Russian economic thought.
   (b) Economic thought in pre-feudal and feudal Russia.

[4] The paucity of Russian economic material for Americans should be contrasted with the very full knowledge of American economic affairs and writings displayed by Russian authors. Judging by the references cited in Soviet writings, Soviet economists have available virtually all newspapers, magazines, books, and government publications of any significance published in this country. Moreover, a reading knowledge of English is apparently much more frequent among Soviet economists than a reading knowledge of Russian among American economists.

(c) Economic thought in the epoch of Peter I.
(d) Economic thought in the eighteenth century (Lomonosov, Rychkov, Shcherbatov, Radishchev, etc.).
(e) Economic thought in the first half of the nineteenth century (Mordvinov, Turgenev, Pestel, Herzen, Milyutin, etc.).

The second volume is expected to be concluded during 1946 and will be devoted to the second half of the last century.

3. K. Ostrovityanov, *Sotsialisticheskaya Sistema Narodnogo-Khozyaistva i Zakony ee Razvitiya* (The Socialist System of National Economy and the Laws of its Development). (Place and date of publication unknown.)

   A discussion of Marxist-Leninist-Stalinist economic thought in the light of the institutional development of the USSR.

4. K. A. Pashitnov, *Ekonomicheskiye Vozzreniya Dekabristov* (The Economic Outlook of the Decembrists), Gospolitizdat, 1945.

   A review of the factors influencing the economic situation and the economic thought of the Decembrist revolutionaries and of Russia during the first quarter of the nineteenth century.

5. *Ocherki Teoriya Sovetskogo Khozyaistva* (Essays on the Theory of the Soviet Economy), edited by K. A. Ostrovityanov, Moscow, 1945.

   A series of essays on various aspects of the Soviet economy, based on the new orientation of the teaching of Soviet political economy as introduced in 1942. The essays deal with the laws of development of a socialist economy, the rôle of planning, the law of costs in the Soviet economy, the rôle of money and monetary circulation, economic accounting, collective farm income and differential rent, Soviet trade and the collective farm market, and the theory of socialist production.

6. N. N. Rovinski, *Gosudarstvenny Byudzhet SSSR* (The State Budget of the USSR), Gosfinizdat, 1944.

   A comprehensive account of the preparation and execution of the Soviet budget, prepared as a textbook for financial and economic technicians.

7. M. I. Bogolepov, *Sovetskaya Finansovaya Sistema* (The Soviet Financial System), Gosfinizdat, Moscow, 1945.

   A brief pamphlet description of the USSR's financial organization and its operation.

8. V. M. Batyrev and V. K. Sitnin, *Finansovaya i Kreditnaya Sistema SSSR* (Financial and Credit System of the USSR), Moscow, 1945.

9. D. V. Savinski, *Kurs Promishlennoi Statistiki*, (Course in Industrial Statistics). (Probably published in Moscow, 1944.)

10. *Slovar-Spravochnik po Sotsialno-Ekonomicheskoi Statistike* (Handbook of Social and Economic Statistics), Gosplanizdat, 1944.

    A very valuable guide to the definition and compilation of Soviet statistics. Invaluable to the user of current Russia data.

11. V. S. Nemchinov, *Selskokhozyaistvennaya Statistika s Osnovami Obshchei Teorii* (Agricultural Statistics with the Basis of General Theory), Moscow, 1945.

    A textbook of agricultural and economic statistics, including such

topics as compilation of data, index numbers, linear, multiple and curvilinear correlation, etc.

12. A. Ya. Boyarski, *Kurs Demograficheskoi Statistiki* (A Course in Demographic Statistics), Moscow, 1945.
13. A. Leontev, *O "Kapitale" Marksa* (On Marx's "Capital"), Moscow, 1945.
14. A. Kurski. *Sotsialisticheskoye Planirovaniye Narodnogo Khozyaistva SSSR* (Socialist Planning of the National Economy of the USSR), Gosplanizdat, Moscow, 1945.
    A pamphlet discussing the rôle of planning and methods used to obtain fulfillment of plans.
15. B. Sukharevski, *Sovetskaya Ekonomika v Velikoi Otechestvennoi Voine* (The Soviet Economy in the Great Patriotic War), Moscow, 1945.
    A pamphlet discussion of wartime economic problems.
16. S. V. Sholts, *Kurs Selskokhozyaistvennoi Statistiki* (Course in Agricultural Statistics), Gosplanizdat, 1945.
    A basic text for collective farm personnel and students of agricultural economics.

FOREIGN ECONOMIC DEVELOPMENTS[5]

1. R. S. Levina and I. I. Goldshtein, *Osobennosti Germanskogo Razboinichego Imperializma* (Characteristics of Predatory German Imperialism).
   German economic and political development from Bismarck to Hitler.
2. L. Ya. Eventov, *Ekonomika Anglii vo Vremya Vtoroi Mirovoi Voiny* (England's Economy during the Second World War).
3. E. Varga, *Izmeneniya v Ekonomike Kapitalizma v Itoge Vtoroi Mirovoi Voiny* (Changes in the Capitalist Economy Resulting from the Second World War).
   Analyzes war developments and concludes that most capitalist countries, except the USA and Canada and the neutrals, were gravely weakened by the war. Predicts further sharpening of the "contradictions" of capitalism with chronic mass unemployment, market gluts, and underutilization of industrial equipment. Sees the strengthened position of the USSR in the world economy "exercising a stabilizing influence on the economies of neighboring countries having democracies of the new type."
4. I. Trakhtenberg, *Finansovaya Itogi Voiny* (*Problemy Inflatsiya*) (A Financial Summary of the War with Special Attention to Problems of Inflation).
5. A. Shpirt, *Izmeneniya v Ekonomike Syria i Topliva vo Vtoroi Mirovoi Voine* (Changes in the Economics of Raw Materials and Fuel in the Second World War).

[5] This list consists of studies made at the Institute of World Economics and World Politics. It is not known how many, if any, of these studies have been published in full. A glance at the titles of articles in *Mirovoye Khozyaistvo i Mirovaya Politika*, given below, suggests that some of the studies in this list appeared in that magazine, in whole or in part.

6. V. Lan, *SShA ot Pervoi do Vtoroi Mirovoi Voiny* (The USA from the First to the Second World War).
7. M. Bokshitsky, *Tekhno-Ekonomicheskiye Sdvigi v Promishlennosti SShA vo Vtoroi Mirovoi Voine* (Technical-Economic Trends in American Industry during the Second World War).
8. I. Dreizenshtok, *Zheleznodorozhny Transport SShA vo Vtoroi Mirovoi Voine* (Railway Transport in the USA in the Second World War).
9. I. Sosenski, *Voyennaya Ekonomika Kanadi* (Canada's War Economy)
10. A. Petrushov, *Agrarniye Otnosheniya v Germanii* (Agrarian Relations in Germany).
11. Yu. Vintser, *Nemetskiye Bankiri i Plutokraty* (German Bankers and Plutocrats).
12. S. Vishnev, *Voyennaya Ekonomika Italii* (Italy's War Economy).
13. V. Avarin, *Borba za Tikhi Okean* (Struggle for the Pacific Ocean). A study of Japanese-American economic conflict in the Orient.
14. E. Pigulevskaya, *Morskoi Transport Yaponii* (Japan's Sea Transport).
15. E. Kovalev, *Arenda i Arendnyye Otnosheniya v Kitaye* (Tenancy and Tenant Relations in China).

Economic journals in the USSR include *Planovoye Khozyaistvo* (Planned Economy), *Mirovoye Khozyaistvo i Mirovaya Politika* (World Economics and World Politics), *Novoye Vremya* (New Times), *Sovetskyye Finansi* (Soviet Finances), *Vneshnyaya Torgovlya* (Foreign Trade), and *Sotsialisticheskoye Selskoye Khozyaistvo* (Socialist Agriculture), among others. The first two of these, however, are by far the most important professional economic periodicals published in the Soviet Union and it seems desirable, therefore, to list their recent articles. In the case of *Planovoye Khozyaistvo*, the chief articles appearing in 1945 and the first two issues in 1946 are listed, while for *Mirovoye Khozyaistvo i Mirovaya Politika*, the chief economic articles in the 11 issues which appeared in 1945 and two 1946 numbers are listed. The titles of the various articles are given in English translation so as to be useful to the maximum number of readers.

Planovoye Khozyaistvo

No. 1—Jan.–Feb., 1945

Editorial—The National Economy of the USSR in 1945
Z. Atlas—Monetary Circulation in the Socialist Economy
A. Galitzki—Railroad Transport in 1945
A. Grigorev—On Labor Norms in Industry
B. Sukharevski—The First Plan of Great Work (on the occasion of the 25th Anniversary of GOELRO).
A. Terpigorev and A. Sudoplatov—Some Problems of the Restoration of the Donbas Coal Industry
L. Eventov—Changes in the American Economy During the War

No. 2—Mar.–April, 1945

Editorial—The State Budget of the Victorious Soviet Power
A. Baikov—The Technical Plan for 1945

I. Gladkov—Lenin and the Organization of the Soviet Military Economy during 1918–20
S. Demidov—Reserves for Raising the Yields of Agricultural Crops
M. Mkrtchyan—The USSR's Petroleum Industry in the Years of the Patriotic War
A. Petrov—Methods of Calculating the National Income in the USA and England

No. 3—May–June, 1945

V. Burgman—The Way to a Higher Technical Level in the Construction Industry
A. Galitzki and I. Libin—The Outlook for the Electrification of the Railroads of the USSR
B. Sukharevski—Victory in the Patriotic War and the Soviet Economy
Sh. Turetski—Tasks in the Increase of Internal Industrial Accumulation
A. Sharov—The Restoration and Construction of Dwellings in the Cities of the USSR
K. Dimitrov—Rumania's Economy and the Outlook for its Development
I. Trakhtenberg—The Conversion of Capitalist Countries from War to Peace Economies

No. 4—July–Aug., 1945

Editorial—The Five Year Plan of Restoration and Development of the National Economy of the USSR
N. Bruevich—The Academy of Science and the National Economy of the USSR
B. Dimitriyev—Concerning Correct Crop Rotation
A. Lyubimov—The Next Tasks in the Development of Commodity Turnover.
L. Sapozhnikov and L. Ulitski—Basic Problems in the Chemical Processing of Coal in the USSR
Z. Shashkov—Basic Problems in the Development of River Transport
R. Levina—Land Reforms in Hungary, Rumania and other Countries
M. Miznikov—On the Problem of the Military Economy of Fascist Germany

No. 5—Sept.–Oct., 1945

V. Vologdin—The Utilization of High Frequency Currents in Industry
S. Volfkovich—New Resources of the Fertilizer Industry
L. Volodarski—The Restoration and Development of Leningrad Industry
V. Zotov—The Post-war Outlook of the Food Processing Industry
I. Kovalev—Restoration and Development of Railroad Transport
S. Kaftanov—Preparation of Specialists in the Coming Five Year Plan
M. Saltikov—Mechanization of the Lumber Industry
Sh. Lif—Government Regulation of Industry in the USA

No. 6—Nov.–Dec., 1945

Editorial—Economic Summary for 1945
A. Probst—Problems of the Fuel Balance in the Postwar Period

E. Ryssakovski—Problems in the Electrification of the National Economy of the USSR
B. Vatulin—Basic Tasks of Siberian Agriculture
L. Maisenberg—Price Formation in the Soviet Economy
K. Bozhikov—Bulgaria's Present Economic Situation

No. 1—Jan.–Feb., 1946

A. Zelenovski—Twenty-Five Years of the State Planning Commission
I. Gladkov—Lenin and the Organization of the State Planning Commission
G. Sorokin—The Stalinist Five Year Plans
A. Baikov—Problems of Technique in the Outlook for the Plan

No. 2—Mar.-April, 1946

N. Eremenko—Restoration and Development of the Iron and Steel Industry in the New Five Year Plan
A. Panov—The Coal Industry in the Five Year Plan
A. Galitski—The Postwar Five Year Plan for Railroad Transport
S. Demidov—Restoration and Development of Agriculture in the New Five Year Plan
G. Kosyachenko—Increasing the Nation's Material and Cultural Living Standards in the New Five Year Plan
S. Vishnev—Industry of the Capitalist Countries in the Postwar Period

Mirovoye Khozyaistvo i Mirovaya Politika

No. 1—Jan., 1945

E. Varga—The Decisive Rôle of the State in the War Economies of the Capitalist Countries
L. Frei—Post-war Problems of Foreign Trade Policy
R. Levina and I. Goldshtein—Characteristics of the Economic and Political Expansion of German Fascist Imperialism

No. 2–3—Feb.–Mar., 1945

I. Trakhtenberg—War Finance and Inflation
V. Cherpakov—Problems of the Partial Demobilization of American Industry
E. Varga—Post-war Business Cycle Problems
Yu. Vintser—Post-war Plans for Nationalization in England and the USA

No. 4—April, 1945

M. Bokshitski—Technical-Economic Changes in American Industry during the Second World War
B. Kugel—Influence of the War on the Automobile Park of the USA
S. Zakharov—The International Trade Union Conference in London
I. Dreizenshtok—Railroad Transport in the USA and its Post-war Outlook

No. 5—May, 1945

E. Pigulevskaya—Japan's Ocean Transport and the Pacific War
E. Varga—The Course of the Business Cycle after the Conclusion of the War in Europe

S. Vishnev—Development of the Armed Strength of the Powers during the Second World War
A. Troyanovski—In Memory of a Great President
Editorial—The Study of the Economics and Politics of Foreign Countries

No. 6—June, 1945

L. Roitburd—Post-war Problems of the American Steel Industry
A. Gurevich—The Land Reform in Hungary
K. Dimitrov—Agrarian Problems and Agrarian Reforms in Rumania

No. 7—July, 1945

M. Bokshitski—The Research Organization of American Industry
I. Zlobin—Bretton Woods and the English Regional Monetary Agreements
V. Maslenikov—Problems of Chinese Economic Development

No. 8—Aug., 1945

A. Shpirt—Preliminary Summary of the Economic War of 1939–1945
S. Melman—The Problem of India's Sterling Accumulation
P. Lisovski—Italy after the Banishment of the Fascist Occupiers
V. Cherpakov—The International Aviation Conference
M. Kol—Agriculture and the Situation of the Peasantry in Liberated France

No. 9—Sept., 1945

E. Varga—Regulation of the Economy and Planlessness in the Capitalist Countries during the War
M. Kogan—The American Oil Refining Industry during the War
N. Pukhlov—Rumanian Trade Unions in the Struggle for Democracy
E. Kovalev—Influence of the War on Agrarian Relations in China
V. Lyubimova—France's International Economic Agreements
I. Goldshtein—A Year of Polish Rebirth

No. 10—Oct., 1945

V. Lan—The Significance of Foreign Trade for the USA
D. Zorina—The Problem of the Nationalization of the English Coal Industry
I. Vatolina—England's Indebtedness to Egypt
V. Maslenikov—China on the Threshold of a New Existence
M. Meiman—The Economic Situation of Liberated France

No. 11—Nov., 1945

Sh. Lif—Concentration of American Industry during the Second World War
M. Lukyanova—The Economic Base of Japanese Aggression
P. Kaminski—Consumer Credit in the USA during the War
B. Kogan—Trends in Canadian Agriculture during the War
O. Klesmet—Argentina's Economic Situation during the Second World War
V. Karra—Coal Problems in Post-war Europe

No. 12—Dec., 1945

V. Lan—Reconversion and the Unemployment Problem in the USA
M. Kogan—The American Oil Industry during the Second World War
M. Rubinshtein—The Secret Diplomacy of International Monopoly
B. Dantsig—Agrarian Reform in Turkey
Statistical Supplement—Published in separate volume; contains basic economic data for foreign countries.

No. 1–2—Jan.–Feb., 1946

A. Petrushov—Agrarian Reform and Democracy
V. Sokolov—The Anglo-American Economic Agreement
S. Drabkina—The Strike Movement in the USA
B. Christov—The Economic Situation of Bulgaria
V. L.—On the Anglo-American Oil Agreement

No. 3—March, 1946

J. Pevsner—Japan after Capitulation
I. Faingar—Concentration of Capital and the Part Played by the Monopolies in Fascist Germany
I. Sosenski—The Postwar Food Problem
N. Veitzman—The Financial Position of the Biggest Industrial Monopolies in the United States at the Beginning of Reconversion
Note—Expenditures of the USA Abroad During the War

Some indication of the breadth of interest of Soviet economists working directly for a government agency may be obtained from the following list of contents of one number of the official organ of the Soviet Foreign Trade Ministry. The articles listed are taken from the October, 1945, issue of Vneshnyaya Torgovlya (Foreign Trade), a monthly journal:

A. Ivanov—The USA's Export-Import Bank
N. Cheklin—A Summary of Lend-Lease
F. Piskoppel—Conjuncture of the World Wheat Market in 1945/46
A. Gorchakov—On the Foreign Tourist Trade
V. Gostev—Cartels in the USA
A. Korobov—The Development of Brazilian Industry

It is readily apparent even from a quick survey of the titles of books, studies, and articles listed above that, next to the problems of their own country, Soviet economists are concentrating upon the most careful and detailed study of the American economy, particularly its current development and future outlook. There would seem to be good reason to advocate that this attention should be reciprocated by American economists who must more and more take cognizance of Soviet policies in the most diverse areas of domestic and international economic activity. But before this is possible steps will have to be taken to increase the flow of economic materials and to increase the number of economists competent to use the data in original Russian sources.

HARRY SCHWARTZ*

* This article is based on research made possible by a Social Science Research Council Fellowship. The author is assistant professor of economics at Syracuse University.

Revision of British Company Law

The English Company Acts, revised at periodic intervals to place limited liability enterprise under state scrutiny, have been subjected to recent detailed criticism by a committee of inquiry under Mr. Justice Cohen, a judge of the King's Bench Division of the Supreme Court of Judicature.[1] This committee, composed of distinguished members of the bar, economists, accountants and business men, was appointed by the Board of Trade to consider and report what major amendments were desirable in the Companies Act, 1929, and in particular to review the requirements prescribed in regard to the formation and affairs of companies and the safeguards afforded investors and the public. Its report, published in June, 1945, has elicited wide comment in both Britain and America as it provides one of the best reviews of traditional and contemporary accounting and corporate practice in the former country. In addition, the committee proposes reforms, some conservative, others drastic, for blatantly outmoded or illegitimate business procedures, but it has skillfully avoided "placing unreasonable fetters upon business which is conducted in an efficient and honest manner," while making sure that "as much information as is reasonably required shall be available to shareholders and the public."[2]

The Labor Government has accepted the recommendations of the Cohen committee in full and is preparing a bill to give effect to them. Before this measure is introduced in Parliament, however, companies are urged to bring their practices in line with the committee's proposals, a suggestion which has been followed by a number of prominent firms.

The Cohen committee expresses satisfaction that the great majority of of public and private limited liability companies are managed honestly and are of marked benefit to British trade and industry. The fullest practicable disclosure of information concerning the activities of companies, in its opinion, will lessen the opportunity for abuse and coincide with an aroused social consciousness. The suggestions of the Amendment Committee have been aimed at aiding shareholders to exercise a more effective general control over the management of their companies, although they indicate that this aim will be attained "more by selection of the proper governing body of each company than by the provisions of any statute."

When viewed in its entirety, the Company Law Amendment Report is seen to stress that the future system of private enterprise must operate with complete honesty and with full publicity. When considering all aspects of business and accounting practice, including company managements, the committee has attacked each subject with equal intensity except, perhaps, that of the increasing use of nominees for shareholdings. So widespread, in fact, has this procedure become that in 1943 over 600,000 individual holdings of stocks and shares were registered in the name of nominees of joint stock banks alone. Drastic action is called for either by the prohibition altogether of the nominee plan (except for attorneys and trustees) or nominees should be compelled by law to disclose to the companies the names of their

[1] See Minutes of Evidence taken before Company Law Amendment Committee (London, H.M. Stationery Office, 1943), for details of this inquiry.

[2] Report of the Committee on Company Law Amendment, Cmd. 6659, pp. 115.

beneficial owners. The Cohen committee rejected these alternatives, recommending that shareholders be required to state, on signing a transfer or direction to the company, whether they are beneficial owners or not; that if any person is directly or indirectly the beneficial owner of one per cent or more of the issued capital, he must make a full declaration to the company. In addition, the Board of Trade would be provided with drastic powers to investigate the ownership of shareholders whenever it is considered desirable in the public interest.

In relation to other matters, the committee's proposals are drastic, especially as to the secretiveness of company accounts and the responsibility of directors. It was not generally known, before the inquiry, that the proportion of private to public companies had been steadily increasing in recent years. The great advantage of the private company, the fact that it need not file its accounts with the Registrar of Companies, has led many public companies to convert their subsidiaries into private companies. The Amendment Committee has suggested that no private company can claim exemption from filing accounts if its membership includes a body corporate (other than a corporation sole), or if a body corporate is beneficially interested in its shares. Although this recommendation permits the private family company to go unhampered, it stops abuses on the part of public firms. In addition, holding companies are to disclose full information about their subsidiaries by publishing consolidated accounts. On the presentation of accounts generally the committee follows the suggestions of the Institute of Chartered Accountants, coming out strongly against hidden reserves and for greatly enlarged financial statement data.

One major weakness of the Companies Act, 1929, was that directors were only liable for untrue statements in a prospectus. The Amendment Committee recommends that they should be liable at civil law also for misleading statements and for the omission of material information which may be misleading. It will also make the expert liable for any untrue or misleading report which he formally allows the directors to include in a prospectus. Advertisements for "placings" are to be put on the same footing as prospectuses.

In framing its report, the Company Law Amendment Committee has avoided making any proposal which would restrict honest business management, and it has endeavored to provide every possible impetus to increased publicity of financial facts. The balancing of these objectives, each with its proper emphasis and with relation to the nation's expanding peacetime economy, transforms what might otherwise have been a dry state paper into a well-conceived approach to the reform of major deficiencies in prevailing Company Law. The incorporation of the Cohen committee's recommendations in British statutory law should be facilitated both by their moderate tone and by the gravity of the business, accounting, financial and managerial weaknesses they seek to correct.

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Mr. Sumberg's Interpretation of the Soviet Turnover Tax

In the March, 1946, issue of this *Review*, Mr. T. A. Sumberg in his article, "Soviet Union's War Budgets" provides a valuable summary and analysis of Russian wartime finance. In speaking of the "turnover tax," Mr. Sumberg states: "The tax is the main financial instrument by which the Russian state curtails consumption in order to promote capital construction and national defense. Offering no possibility of evasion by the taxpayer-consumer, it is also an efficient weapon for the forced mobilization of the community's savings in the interest of rapid industrialization and urbanization."[1] This statement suggests a point of view which, it seems to me, should not be left unchallenged. It is difficult to understand how the tax can operate to curtail consumption. The allocation of resources in Russia as between production for war and for civilian purposes has been determined by direct rather than by financial means. The over-all plan predetermined what resources were to be devoted to war needs and what to civilian uses. If by "consumption," is meant "real" consumption, it is not clear how the turnover tax made any difference in the quantities of civilian goods made available to the general public. Soviet civilians would not have had more food if the tax had not been imposed.

One may also question whether the tax should be regarded as borne by consumers. In a socialistic state, the price of products sold by the trusts are established by administrative rule. Whether the tax raises prices depends not upon the tax itself but, rather, upon the accompanying instructions, if any, to trust price-fixers as to what price changes are to be made. If no price change is made with the imposition of the tax, the tax is without significance. A change would be made in accounting terminology only. Instead of all of the net return of the trusts being called "profits," a part would be called "turnover tax yield" and the remainder, if any, "profits." Such a procedure would alter labels, not substance.

The Soviet practice appears to adjust prices in accordance with changes in the rates of the turnover tax. Even in this event, the tax itself is also of little significance; what is important is the decision to charge the public different prices. In a setting of diminishing supplies of real things, Soviet officials were forced to decide to what extent to employ price and to what extent to employ direct controls to ration the limited supplies among the members of the public. A decision to ration by price alone would call for raising prices under such conditions. The price policy of the government is important because it determines to what extent monetary mechanics (money expenditures and prices) are to be used to ration available supplies to the public. Whatever its price policy, it seems untenable to hold that the civilian population as a whole would be worse off, even if prices were set so high as to make all non-monetary rationing devices, such as rationing cards, selected admittance to special stores, standing-in-line, unnecessary. The population as a whole would get the same quantities, but a decision to use price alone to ration might, and probably would, have given some people

[1] *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (March, 1946), pp. 119–20.

more real things and others less. The case for non-price rationing in Russia is much the same as the case for rationing in wartime in capitalistic countries. In both types, the pattern of income is unequal and the rich would, in either case, consume unduly at the expense of the poor.

Under socialism, it is doubtful whether consumers can be taxed by a turnover tax levied by the state upon its own agencies. Taxation implies that someone is forced to give up something to the state which he would have retained if the state had not exercised its taxing power. The "turnover tax" does not do this. A state sales tax upon products sold by state agencies is an insistence by the central administration that the accounting practice of the trusts label part of the profits "tax receipts" instead of simply "profits," and the tax *may* act as an administrative instruction to change prices of products. Only the price change can be significant, and it has significance as a decision to ration more or less by price and less or more by direct means. Given the price policy of the government, the "tax" is purely nominal in character and can scarcely be regarded as being a burden to anyone.

If this point of view is correct, the tax should not be regarded as a weapon to "force mobilization of the community's savings." If, with increases in tax rates, state agencies charge higher prices, the action has the effect of rationing relatively more by price and, in addition, it takes more money out of the hands of the public. With less money, people may spend less in the future and thereby reduce the work-load of non-monetary rationing devices and increase the relevance of price as a rationing device. Thus, it seems to me that the turnover tax should not be considered as one of the more important aspects of the Soviet financial system.

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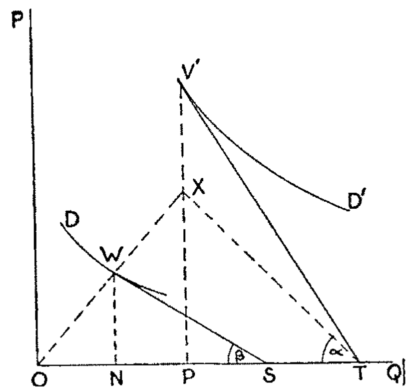
Geometrical Note on Elasticity of Demand

The graphical evaluation of elasticity may be approached in several different ways. If the discussion be restricted to natural scales, two principal methods are generally used. The first uses length ratios, the other employs constant outlay curves. Both of these methods have their limitations. This appears particularly in comparing the relative elasticities of points on two demand curves. Suppose we wish to compare elasticities at two points, one located on a given demand curve, the other located on this demand curve after it has been shifted upward and to the right. A comparison of length ratios might be confusing. A perhaps simpler method may be evolved as follows:

Let us compare the elasticity at the point W, Ew, with the elasticity at V, Ev.



Draw a tangent to D at W, intersecting the abscissa at S. Draw a tangent to D' at V', intersecting the abscissa at T. Extend OW to cut the perpendicular $V'P$ at X. Connect X and T. Then, if the angle β is greater than the angle α, the elasticity at V' is greater than that at W because

$$Ev = \frac{\tan \beta}{\tan \alpha} Ew.[1]$$

JOHN S. HENDERSON

[1] This may be easily proved as follows: By definition, $Ev = \frac{dq}{dp} \cdot \frac{p}{q} = \frac{pt}{pv} \cdot \frac{pv}{op} = \frac{pt}{op}$. But $\frac{pt}{px} = \frac{1}{\tan \alpha}$. Substituting we secure $Ev = \frac{px}{op} \cdot \frac{1}{\tan \alpha}$. But $\frac{px}{op} = \frac{wn}{on}$. Therefore, (1) $Ev = \frac{wn}{on} \cdot \frac{1}{\tan \alpha}$. By definition, $Ew = \frac{ns}{wn} \cdot \frac{wn}{on}$; substituting from (1) we secure (2) $Ev = \frac{Ew}{\left(\frac{ns}{wn}\right)} \cdot \frac{1}{\tan \alpha}$. But (3) $\frac{ns}{wn} = \frac{1}{\tan \beta}$. Substituting (3) in (2), we secure $\frac{Ev}{Ew} = \frac{\tan \beta}{\tan \alpha}$. But since the tangent of an angle increases with the angle, $\frac{Ev \gtreqless Ew}{(0 < \theta < 90°)}$ according as $\alpha \lesseqgtr \beta$.

MEMORIALS

John Henry Gray
1859-1946

For nearly half a century Professor Gray has occupied a prominent place in American economic education, particularly in his chosen field of railroads and public utilities. In an era when the general practitioner was in vogue, the figure of Gray as a liberal, perhaps something of the iconoclast, certainly as an "expert" in government and public service, stands out in bold relief. He was a pioneer in the development of that specialization which has accelerated the progress of scientific knowledge in more recent times. He did much to bridge the gap between the arm-chair economic theorist and the practical specialist. And withal Gray seemed to lose none of the inspirational and mellowing influence that he had upon his students and disciples.

John Henry Gray was an outstanding teacher and scholar in a generation of economists who were remarkable for their broad culture and social mindedness—John B. Clark, Henry Adams, Hadley, Ely, Seligman, Taussig, Davenport, Hollander, and others. That he is entitled to a place even among these economic notables is due to the wide range of his interests and the long-sustained period of his productive effort. He began his professional career at the age of twenty-eight as an instructor in political economy at Harvard and continued as professor and head of the department in the graduate school of the American University at the age of seventy-three, a span of forty-five years; and his activity as a writer and pamphleteer continued to within a few years of his death at eighty-seven. These fruitful years of extraordinary physical and intellectual vigor added to his accomplishments, but they do not explain the versatility of his interest. For Gray was not only a stimulating and inspiring teacher; he was a distinguished public servant; he was a painstaking associate editor of the *Economic Bulletin* for several years and of the *Journal of Accountancy* for seven years; he was a forceful writer on a broad range of subjects and a recognized authority in the field of public utilities and railroads.

In general, Gray divided a distinguished career as an economist among the lecture halls of major colleges and universities, government and public service, and the liberal movement in which he was a fearless spokesman for human rights.

Dr. Gray began teaching as an instructor in political economy at Harvard in 1887, the year he graduated from Harvard with his bachelor of art's degree. Two years later he went to Germany, the mecca of aspiring scholars, to earn his Ph.D. at the University of Halle. Back in the United States with his European doctor's degree, in 1892 he was appointed professor of political economy and social science at Northwestern University, where he remained for fifteen years. In 1907 he was called to the University of Minnesota as professor of economics. He stayed there until 1920, when he accepted a similar position at Carleton College which he held for five years.

After three years with the Interstate Commerce Commission as chief analyst and examiner in the Commission's bureau of valuations (a position he had previously held from 1917 to 1919), Dr. Gray returned to teaching as head of the department of economics in the graduate school of the American University from 1928 to 1932.

Dr. Gray entered government and public service in the decade before the turn of the century. In 1893 he served as chairman of the World's Congress Auxiliary on Political Science in Chicago, and from 1894 through 1896 he was chairman of the municipal committee of the Civic Federation of that city. The United States Department of Labor called on Dr. Gray in 1902 to investigate restrictions of output in Great Britain. He also represented the United States Commissioner of Labor at the International Cooperative Congress in Manchester, England. Later that year he represented this nation at Congresses of labor, commerce and industry in Düsseldorf, Germany, and Ostend, Belgium.

Returning to America he became a member of the National Civic Federation Commission on Municipal Ownership in 1905, and served the Commission as expert in the field of American investigation. From 1911 to 1914 he served as a member of the Federation's Executive Council Department to probe the regulation of public service corporations. He was later made secretary of the department and director of its investigations. During the first World War Dr. Gray also served in the United States Army as a Lieutenant Colonel and as a member of the board of appraisers of all property commandeered for the Army. He claimed the distinction of being the second man in the United States to enroll in the American Legion. He was a member of George Washington Post No. 1 of Washington, D. C.

At the time of his leaving Carleton, which he often referred to as a "bully good" college, Dr. Gray presented his entire library to the College. This collection comprises about a thousand volumes in the fields of economics, history, and politics. The collection includes rare editions of early economic writings, such as a copy of the third edition of Adam Smith's *Wealth of Nations*, and other books long out of print, and a large number of pamphlets dealing with specialized topics such as railroad transportation, public utilities, and taxation. For about ten years after Gray left Carleton, a prize of $100 known as the John H. Gray prize was offered by Mr. Dwight S. Bobb of Chicago for the best essay by an undergraduate on an economic topic. This prize afforded keen competition among economics majors during those years.

A prolific writer, Dr. Gray in 1913 was the author of a compilation and analysis of all American statutes relating to the regulation of public service corporations. In 1929, with G. W. Terborgh, he made a study of Urban Mortgages in the United States since 1920; with Jack Levin, in 1933, he published a study on the Regulation and Valuation of Public Utilities. Many articles, too numerous to mention, he wrote for economic and other scientific journals.

In 1914, Professor Gray was president of the American Economic Association.

In January, 1930, Dr. Gray was indignant over the speculative excesses that contributed to the stock market collapse in the fall of 1929. He charged former President Coolidge, Andrew Mellon, and Professor Irving Fisher as being most responsible for "continuing and expanding the mania" of speculation, which preceded the Wall Street slump.

During the last decade of his life, which was spent in Washington, D. C., Dr. Gray was a familiar figure at the Cosmos Club, and was active in the work of the People's Lobby. Since 1935 he had served as treasurer of that organization. These sunset years also afforded him an opportunity to satisfy a longing for travel. This took him to Europe and Africa, to the West Indies and South and Central America.

As an economist Gray early threw off the spell of the classical economists and was influenced to a greater degree by modern schools of thought. He had little patience with such classical doctrines as the labor theory of value, the wage-fund theory, or even Taussig's refinement of the "discounted" marginal product of labor. Wherever and whenever possible, he urged his students to get quantitative measurements—"facts and figures." His experiences in government service, particularly his work with the bureau of valuations of the Interstate Commerce Commission, confirmed his belief that theory and practice should complement each other—"fit each other as hand and glove." It was this insistence on factual support that explains, in part, his great success as a teacher. His students recall with sentimental pleasure his classroom Odysseys, his informal manner, his generous tolerance of an opposite point of view, his sparkling wit, his genial humor. But beneath all these traits, his students learned to think, accurately and independently, and to act upon deep conviction.

Among economists of Gray's generation, there may be more profound and erudite scholars, more vigorous theoretical analysts, more original social philosophers, but it would be difficult to find an economist who combined theory and empirical reference in a more original and useful way, and a finer gentleman, perhaps, one could never find.

JESSE S. ROBINSON

Carleton College

Umberto Ricci

On January 3, 1946, Umberto Ricci died in Cairo while returning from Constantinople to Rome, to occupy again the University chair in political economy from which he was driven by the fascist government in punishment for his criticisms of their economics.

Self-educated and without benefit of academic degrees, Umberto Ricci found his career when Ghino Valenti, first among agricultural economists of the past generation, wanted his help in the formation of the first register of agricultural property and thus rescued him from simple administrative work. Thereafter, his rise was rapid. It was my good fortune in 1910 to recommend him, together with Pasquale Jannacone as secretary general and Giovanni Lorenzoni as agricultural economist, to head the statistical work of the International Institute of Agriculture. It was a superb triad,

and the Institute won a world-wide position of prime importance through its publication of agricultural monographs and statistics. Professor of economics and statistics in Macerta, Parma, Pisa, and Bologna, he was called in 1924 to succeed Maffeo Pantaleoni in Rome. Driven out by fascism in 1928, Ricci was called in 1929, together with Arangio Ruiz, Bresciani Turroni and Siotto Pentor, to complete the magnificent company of Italian teachers with which the Egyptian government intended to give luster to the law faculty of the new National University of Cairo. He remained there until 1940, when Italy's entrance into the war severed friendly civil relations between the two countries. But in 1942 the Turkish government called him to succeed Röpke in economics at Istanbul. The calls from Rome, Cairo, and Constantinople testify to the renown acquired by Ricci in the international scientific world, which generously elected him to honorary membership in such societies as the American Economic Association, Academy of Lincei, the International Institute of Statistics, the Cobden Club of London, the Society of Political Economy of Paris, the Egyptian Institute, and the International Colonial Institute.

He was a learned and penetrating economist. From him we have in the theoretical field a volume on capital and numerous monographs on supply and demand curves, on the theory of wants, on savings and taxation—which will and should long endure for their persistency in analysis of the problems and consistent courtesy to those concerned. But in this too brief memorial it is possible to record only a few of the theoretical contributions made by him. It is better instead to record the fact that he could descend from the pure and sometimes rarified air of abstract contemplation into the arena of applied economics, with vigorous thought and a fighting spirit. His writings of 1921 on the bankruptcy of city finances, of 1920 on Italian protectionists and economists, on politics and economics, and his many articles published in magazines and newspapers are memorable. One of those, insistently requested by a fascist magazine, cost him his chair in Rome. If ever there was a punishment that brought honor to the victim and disgrace to the punishing power, that was it. For Umberto Ricci, in that article as well as in others, utilized superbly the weapon of subtle irony that brings smiles to the reader and mortally offends the hapless one who has exposed himself to destructive criticism. Unable to reply to the criticisms effectively and therefore atrociously derived, the Dictator vindicated himself by depriving Ricci of his chair. He had reason to fear him, for Ricci had opposed fascism in discussions as well as in writings. Although in the beginning, in what might be called the period of fascistic financial liberalism, he also shared the illusion that some progress might be made with Mussolini, yet when Salandra, Liberal leader, joined the opposition following Mussolini's speech of January 3, 1925, Ricci participated in the guidance of the Liberal party, firmly resolved to oppose the fascists.

Hence the act of revenge, which honored him. Now we are assailed with regret that he can no longer be with us to fight the battles of liberty and to carry on the work of criticising economic errors and contradictions, a task always necessary and perhaps more so in times of freedom than in times of tyranny. For if in the latter times we can blame mistakes on the tyrant, in the former we cannot blame others, and to accuse ourselves is

always distressing. With the passing of Umberto Ricci we have lost not only a master in the field of science, but also a master of economic criticism. We lament not only for science, but also for Italy, the unjust fate that brought him death in a foreign land on the eve of that devoutly desired return to his native land.

LUIGI EINAUDI

Rome, Italy

Henry Calvert Simons

Henry C. Simons, professor of economics at the University of Chicago, who died June 19, 1946, was a stout-hearted and tough radical-libertarian in the tradition of nineteenth century economic liberalism. His major writings all essentially were tracts, tracts which, offering a broad, positive and radical program for liberals, countered on all the main fronts of political economy the collectivist implications of both the new "liberal" economics of "planning" and the older, but still virile, special-interest economics of reactionary conservatisim.

Simons's own political faith was the traditional liberal one epitomized in distrust of private concentrations of power (monopoly), in decentralization of government, and in minimal (negative) use of the state's monopoly of power. Minimal exercise of power, however, was not "do-nothing" government. In order to minimize political control of relative prices (resource allocation), the state must establish and vigilantly preserve against special interests conditions in which free-market (competitive) resource allocation can be efficient.

His positive economic program for liberal government emphasized three crucial and interrelated problem areas in which democratic government least has recognized its positive responsibilities for maintaining free-market rules: (1) money, (2) monopoly, and (3) equality of personal economic power.

The most radical part of his program set forth the "rules of the game" for the "financial good society." The state must recognize that it must reserve to itself alone the power to control the value of money and, recognizing its monopoly of power, must act responsibly according to stable rules of law. To establish its monopoly, it must strip private corporations (particularly, but not exclusively, banks) of their present power to control the value of money through their creation and destruction of "near-moneys" (deposits and debt instruments).[1] To achieve legal and administrative simplicity in monetary control, maximum responsibility of government to the electorate, and minimum misunderstanding by private enterprise, the federal debt structure must be converted rapidly into currency and perpetuities and the interest-bearing portion reduced to manageable proportions. To create the monetary certainty essential to a prosperous free-enterprise economy, the state must establish in law a definitely stated and stable monetary rule: stabilization of an index of the general price level (hence, indirectly, effective maintenance of aggregate money demand).

[1] It was here that the familiar "100% banking" scheme entered the program.

Upward movements of the index would be countered by a budget surplus (currency retirement) obtained largely by lowering the personal income tax exemption limits (and, if necessary, by "across-the-board" increase of rates) and downward movements by budget deficits accomplished by the reverse tax changes and by currency issue (debt retirement). Borrowing would be used only as a stop-gap anti-inflationary device.

The problem of depression, however, he saw could not be solved simply by the establishment of reasonable monetary certainty so long as the economy contained large and crucially significant sectors in which prices controlled by industrial and labor monopolies had only upward flexibility. Assurance of the requisite price flexibility must be established by the state through "deliberate creation and preservation of competitive conditions" wherever possible. His case against private monopoly, however, was much larger than the case against short-run price inflexibility. Depression or not, monopoly involves interference with efficient (equal productivity) allocation of resources, particularly labor resources. Furthermore, the existence of large-scale private concentrations of power along functional lines in labor unions and industrial associations imposes upon government the settlement of conflicts which can be resolved only by collectivization or destruction of the monopolies and which must be resolved if the state is to endure.

Professor Simons proposed that government attack the problem of inequality of personal economic power through the progressive personal income tax. The personal income tax should be relied upon as the major source of government revenue and the inequality-creating excise taxes (with a few exceptions) should be abolished. The tax should be based on a broad definition of taxable personal income by eliminating distinctions with respect to kind of income (particularly capital gains) and tax avoidance, particularly through tax-exempt security earnings and the tax provisions on capital gains and undistributed corporate earnings should be minimized.

Simons prefaced his "Some Reflections on Syndicalism"[2] with a quotation from Alfred Marshall: "Students of social science must fear popular approval; evil is with them when all men speak well of them. If there is any set of opinions by the advocacy of which a newspaper can increase its sales, then the student . . . is bound to dwell on the limitations and defects and errors, if any, in that set of opinions; and never to advocate them unconditionally even in an *ad hoc* discussion. It is almost impossible for a student to be a true patriot and to have the reputation of being one at the same time." He was one of few economists who have been outspoken on public policy, who followed Marshall's admonitions unfailingly. In his pursuit of the correct economic policies considerations of political expediency were anathema to him.

Not the least of his virtues was the polished style of his writings. They are not surpassed in economics in their sprightliness and, what is rarer, in lucidity and directness.

H. G. Lewis

University of Chicago

[2] *Journal of Political Economy*, Vol. LII (March, 1944), p. 1 ff.

BOOK REVIEWS

Economic Systems; Post-War Planning

Road to Reaction. By Herman Finer. (Boston: Little, Brown. 1945. Pp. xii, 228. $2.00.)

Freedom under Planning. By Barbara Wootton. (Chapel Hill: Univ. of North Carolina Press. 1945. Pp. vii, 180. $2.00.)

These lucid and interesting books discuss timely matters, and are well worth the few hours required for their reading. Each replies to Friedrich A. Hayek's *Road to Serfdom*. Each, as is true of the Hayek book, is more likely to be judged by the individual reader's ingrained economic and political philosophy than it is to change that philosophy to any marked degree.

Professor Hayek's *Road to Serfdom* is frankly "political." It defends the politico-economic policy of adhering to the free market as the all-important device for determining what should be produced, and how, and for whose benefit. Socially imposed controls, Professor Hayek admits, must modify this, even possibly to the extent of providing basic guarantees of minimum health facilities and of economic security. However, desired modifications must be made by *laws* which are clear, relatively simple, and mean the same thing to all men; they must not be made through *discretionary powers* exercised by economic planners and administrators. The latter, once granted in substantial number, will feed upon themselves, ending in dictatorship of the few over the many—"serfdom." The book projects into the policy sphere previous writings of Professor Hayek in which, adhering more strictly to economic analysis, he contrasts economic organization and processes under collectivism with those of a free market economy.

Professors Finer and Wootton attack this thesis from the same bases. They contend that existing democratic processes in the United States and Great Britain are sufficiently deep-rooted and sufficiently developed as techniques to permit grafting onto them substantial elements of economic planning. They decry the "lunacy" that planning some things means planning all, pointing out that enough general agreement on some comprehensive economic objectives now exists to permit governmental agencies to construct detailed plans for, and to administer programs looking toward, their effectuation. As more and more specific goals are agreed upon, planning and administration can and must take over without violating any of the essentials of democracy or individual freedom.

These writers struggle with the most serious dilemma of our modern democratic societies: Economic processes and means of controlling them have become increasingly complex and technical in nature while Mr.

Average Citizen, whose desires constitute orders in a true democracy, has little time or ability to study and understand economic phenomena. In effect, Professors Finer and Wootton say to Mr. Average Citizen: Do as you would if you were building a house and yet knew nothing about the techniques of architecture or engineering. Formulate your idea of the type of house you want, of its broad features. Then hire an architect who will supervise the planning and building. Let him fill in the details of the plan, make estimates of the costs of alternatives, come back to you for discussions of such alternatives, hire the builder who will take over the actual construction and, finally, supervise the builder's work to protect your interests. Without technical construction knowledge, you can determine from time to time whether your architect is achieving the goals you have set. You will get a house most closely conforming to your desires if you proceed in this manner.

Substantial portions of Professor Finer's efforts are devoted to disproving positions taken by Professor Hayek. He denies the latter's contention that we must choose between the two extremes, all planning and no planning, calling this a *reductio ad absurdum* argument (p. 26). He labels as stupid Hayek's assumption " . . . that political power is neither limited in scope, restricted in authority, responsible in operation, nor coöperative and decentralized in execution" (p. 67). He vehemently denies that fascism and nazism arose out of socialism and from trends started by socialists in Europe; rather, they were middle class movements shaped by the spirit of the people involved (pp. 88–101). The destination of the Russian government as well as its present methods must enter into an evaluation of the Russian system (p. 103). Hayek's supreme reliance upon the efficacy of competition and free pricing is declared unsound; "private enterprise is not innocent; it is guilty and sick" (p. 157). Even to enforce free competition to the point where it could achieve the ends which Professor Hayek attributes to it would be such a tremendous task that it would require more government action than his thesis possibly could permit (pp. 78–81). The objective reader must admit these are telling blows, skillfully directed. However, he may hesitate to agree with Finer that he has shown: " . . . Hayek's apparatus of learning is deficient, his reading incomplete; that his understanding of the economic process is bigoted, his account of history false; that his political science is almost nonexistent, his terminology misleading, his comprehension of British and American political procedure and mentality gravely defective; and that his attitude to average men and women is truculently authoritarian" (p. xii).

On the constructive side, Professor Finer proposes planning as a "middle way," an approach he believes especially suitable to the spirit of Great Britain and the United States (pp. 123–25). "The two greatest inventions of the nineteenth century are representative and responsible democracy, and expert and impartial administration" (p. 219). These must now be used to achieve for mankind the full benefits of modern technological advances. Certain reforms to rationalize our democratic legislatures are in order in the United States; the executive branch of government must be strengthened

through a "cabinet with collective responsibility"; the two must be coordinated by "productive formal liaison between the White House and the Congress" (pp. 213–216). Such reforms, linked with full use of our knowledge of administrative technique, make us ready to plan and administer comprehensive programs for economic betterment under government aegis. "Society as a whole, acting through its rationally constituted and deputed organs, is in a far better position than at any time in history to move forward to the collective management of many spheres of social life" (p. 225). "The freedom of our time cannot possibly be an entire freedom from government, it can only be a freedom within government" (p. 223).

Professor Wootton's *Freedom under Planning* in a sense supplements Professor Finer's book. It fills in some of the substance of the "middle way." It is more moderate in tone and less sprinkled with barbs at Hayek.

There is nothing new in Professor Wootton's point that economic inequality and monopoly presently deprive the citizen as consumer and as worker of many of the "freedoms" theoretically possessed under an idealized competitive system. Cultural and civil freedoms, she argues, need not be jeopardized by planning if the right people are chosen to exercise the power inherently accompanying successful planning. In Russia there has been no attempt to combine planning with civil liberties.

Some of the best portions of Professor Wootton's book are devoted to an analysis of the practical problem: What should be planned, and how? Planning is defined as the "conscious and deliberate choice of economic priorities by some public authority" (p. 6). Hence, those things which should be planned and carried forward by public agencies are those on which there is general agreement—that is, agreement on the broad objectives, for the technical question of methods must be left largely to the skill of the planning technicians. Planning and freedom are compatible only so long as there is agreement on objectives. Some areas of agreement now exist and others can be found if we have a will to find them. Whereas present political discussions and conflict emphasize points of disagreement, political parties should devote more effort to finding and exempting from political controversy areas of agreement which are commonly known to exist. Once found, programs to achieve such objectives may be safely placed outside the legislature, their administration being undertaken by boards or commissions, such as the London Transport, the Central Electricity Board, and the British Broadcasting Corporation, to cite Professor Wootton's British examples. All this will require centralized authority. Realizing this, and freed from the obligation to make decisions on detailed matters about which he knows that he knows nothing, the voter may be expected to put more effort and intelligence into expressing himself on questions which lie within his competence. Western democracy is young and Professor Wootton finds no reason to doubt its ability to devise increasingly effective methods for establishing accepted objectives and for delegating broad powers to governmental agencies to choose and administer the means of their attainment.

No conclusive evaluation of any of the three books discussed herein should

be essayed by a reviewer. Each expresses an economic philosophy—an approach to the basic problem confronting our society in this post-war world. If Professor Hayek is too dogmatic and overstresses the automaticity with which partial planning and control lead to minority planning of all and therefore to "dictatorship," possibly Professors Finer and Wootton are too optimistic about the ability of democratic societies to evolve improved techniques of popular control of society's objectives, and are inclined to give too little recognition to the successes of pressure-interest groups in perverting social objectives and devoting to their own limited ends the methods and personnel of administrative agencies established by government.

Every sincere student or practitioner of economic planning should read Professor Hayek. From him will come a conception of the vital necessity of forestalling government economic control from following those paths which destroy freedom. Professors Finer and Wootton, no less, should be required reading, for in them will be found sound and, we hope, practical recommendations on how to do the forestalling. Considered as a trilogy, these books at least attest our ability to formulate our major problem in concrete and forceful terms. This is the first step toward a solution which must be evolved if we are to live as free people in a world of economic abundance.

William N. Loucks

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Jobs and Markets. By Melvin G. DeChazeau, Albert G. Hart, Gardiner C. Means, Howard B. Myers, Herbert Stein, and Theodore O. Yntema. A Research Study of the Committee for Econ. Development. (New York: McGraw-Hill. 1946. Pp. xi, 143. $1.60.)

I have had the good fortune to review nearly all of the Committee for Economic Development staff studies on postwar and peacetime adjustment and each time I have found myself framing the same sentence: here is the economists' contribution to short-run and middle distance public policy at its best. No one would underwrite all the analyses or concur in all the recommendations, and some of the monographs have been better than others. All, however, have been technically expert, carefully reasoned, with an emphasis nicely attuned to the importance of the issues with which they deal, and they have been elegantly timed. These, in fact, are the ideas that have guided the reconversion and while ideas (in competition with politics) have not had the monopoly that Keynes once so incautiously accorded them, they have been important. In most respects the great transition has gone rather smoothly—so far. The C. E. D. economists deserve their share of the credit.

This book, the capstone of the several studies of the transition, is fully up to the standard of the earlier studies on which it builds. It sets out the authors' conception of the grand strategy for moving workers into peacetime employment, for countering the inflation that (by the time the book was written) could be foreseen for the early stages and the deflation that

threatened thereafter. Essentially their prescription is to accept inflationary pressure in the early stages of the transition as an accelerant and painkiller in the process of reëmployment. This inflation they would hold in check by price controls—price control slightly softened, but still in the manner of Bowles rather than of Taft. With the completion of the changeover, ar except for rents not later than June 30, 1947, they would substitute controls over the volume of spending. These latter controls should be as available to correct too little spending as to curb too much.

The recommended fiscal controls are fairly staple shelf goods. On the revenue side the authors advocate, in the main, machinery for prompt adjustment of taxes (in particular, delegation of authority to the Executive to adjust the first bracket of the personal income tax) when aggregate demand changes and increased reliance on personal and corporate income taxes with their "built-in flexibility." They have less faith in variations in expenditure and suggest that "the revenue side of the budget is where we must look chiefly for the adjustment of fiscal policy to market demand." Such faith in spending as they have, they invest in the "built-in flexibility" of a more generous social security system and, conservatively, in public works. Having given the Treasury a substantial if (by present-day standards) fairly orthodox assignment, the authors then put the Federal Reserve System back in active business. Alarmed by the large inflationary potential in bank holdings of government securities and their possible contribution to the public's already large supply of cash they propose a large increase in reserve requirements. Existing bank-held securities would be made specially eligible as an interest-bearing but immobilized reserve.

No summary, not even the authors' own, does full justice to a hundred odd pages of detailed resommendation but this, plus the inevitable plea for centralized fiscal management, is the heart of the program.

I, for one, have little quarrel with the C. E. D. program for what it does—and if price control is a good preliminary test it may go farther than Congress and the Administration are likely to get. The authors should perhaps have reminded their readers that the present danger of inflation and the eventual threat of deflation is given not alone by the holdings of cash and its equivalents but also by its distribution between income groups. They also elide the very real problem of forecasting and timing counter inflationary and deflationary action. However, a more important question is left unanswered. If, as the authors state, "sober weighing of the prospects forces the conclusion that inflation and deflation are both real possibilities," there is need for some assurance that their measures are relevant to the magnitudes of the movement that are in prospect. If price controls are to be discontinued by a given date and tax increases are impossible, will an astringent expenditure budget, the monetary controls and the "built-in flexibility" be sufficient? (The authors do not explicitly say that tax increases *are* impossible, but they seem to think so.) Will a downward swing in income be within the magnitude that conceivable adjustments in taxes and more modest adjustments in expenditure could counter? The American economy, it was learned from both the depression and the war, is capable of big things. Without suggesting that the C. E. D. economists should get

into the overly competitive business of model building, I would have wished for some weighting of their measures in relation to the contingencies to be met. An active fiscal policy poses questions both of kind and of amount.

J. K. GALBRAITH

Washington, D.C.

The Economic Lessons of the Nineteen-Thirties. By H. W. ARNDT. (New York: Oxford Univ. Press. 1944. Pp. 314. $3.75.)

This book gives a survey and analysis of the internal and foreign economic policies of the United States, Great Britain, France, Germany and Sweden in the inter-war decades, and concludes with an examination of the lessons to be drawn from these experiences. In undertaking a series of studies the Eonomic Group of the Chatham House Reconstruction Committee decided to prepare a report on the nineteen-thirties. The drafting of the report was done by Mr. Arndt, assisted by discussion with the members of the group. There was a large measure of agreement, but the report is Mr. Arndt's own responsibility.

Mr. Arndt concludes from the inter-war experiences that there could be little hope of an ordered world economy so long as the major countries were unable to cope with their own domestic problems. Accordingly a study which was aimed at international economic problems emerged as a study of the inter-action of domestic and international policies.

The outstanding internal problem of the inter-war period was undoubtedly unemployment. Mr. Arndt concludes that the American slump can in its origins be interpreted as the result of an overexpansion of some of the investment goods industries relative to the long-term needs of the American economy for capital equipment. In most of the European countries he finds that the depression was largely the result of external factors, the cessation of capital import, withdrawal of short-term credit, and the sudden fall of exports. In Great Britain there were special problems growing out of maladjustments incident to overexpansion of certain industries in World War I, and to technological and other changes. The deflationary spiral was in most countries accentuated by orthodox government financial policies.

In most cases large-scale intervention did not occur until the depression had lasted for several years. Yet in the end governments in all countries were forced to intervene.

Most countries tried to curtail imports and push exports to stimulate employment at home at the expense of other countries. Four of the five countries studied tried to combat the depression with "cheap money." Where building played an important part, the reduction in interest rates helped.

These two methods proved to be relatively ineffective. The heart of the problem was a deficiency of internal effective demand. Both consumption and investment needed to be increased. The New Deal in the United States, according to Mr. Arndt, attempted to bring about recovery largely by increasing consumer purchasing power, partly by redistributing income to the poorer classes and partly by direct payments to consumers. The sub-

stantial success achieved was, however, far from complete since the increase in consumer demand was not adequate to produce a satisfactory revival in the demand for capital goods. Mr. Arndt concludes that in advanced industrial countries methods of increasing consumers' demand cannot be relied upon to produce a recovery, once depression has been allowed to gather momentum.

Accordingly, it proved necessary to undertake public capital expenditures. This method was especially applied in Sweden, Germany and the United States, though in the German case it amounted essentially to a rearmament program. Experience shows that public capital outlays to be effective must be on an adequate scale and should be planned well in advance.

Mr. Arndt concludes that experience does not justify the oft-expressed fear that deficits will in periods of large unemployment produce inflation. Nor is it necessarily true that such deficits will permanently increase the tax burden. First, the loans may be used to finance productive capital outlays, and second, the debt will not impose any additional tax burden if the national income increases sufficiently to meet the interest charges. Finally, even in a private enterprise economy there are no rigid upper limits to the level of taxation provided care is exercised in the choice of taxes.

In the thirties countries were concerned with *recovery*. But the lessons point to the great importance of *maintaining* full employment or at least not permitting a serious collapse. Experience indicates three main threats to stability: (1) overexpansion of capital facilities, (2) inflation, (3) external shocks.

The first is peculiarly a danger for a country like the United States. The process of capital construction tends to proceed by leaps and to outrun the long-term needs. What is required is a greater emphasis on consumption. But it is a difficult matter for public policy to determine the appropriate magnitude of any such shift since the long-run requirements of a country for new capital equipment vary with the desirable rate of progress, the population trend, the nature of foreign demand, and government policy.

An equally difficult aspect of the problem of maintaining full employment is the danger of inflation. There were fears of speculative and inflationary excesses in 1929 in the United States and again in 1936–37, not to mention the war years. This remains for the future no less a political than an economic problem.

Some national economies are peculiarly in danger of shocks from without. The gold standard aggravated these shocks. Internal deflation and monetary insulation (exchange control) were the former methods of protection. The new monetary plans seek new and less harmful protective devices. But in the last resort the only way of safeguarding natural economies against external shocks is to diminish international economic instability by: (1) the maintenance of internal stability and full employment, and (2) international planned investment and trade programs.

The book closes with a review of the difficult problems of international

adjustment. We are compelled to face the fact that even with reasonable success, both with respect to our internal problems of stability and full employment and also our new international plans, international equilibrium is difficult on a multilateral trade basis. Mr. Arndt believes that the economic advantages of the optimum division of labor may have to be weighed against the social and economic disadvantages of international instability. Thus we may have to effect a compromise between the need for change and adjustment and the desirability of reducing to the minimum that instability of the market mechanism which exacted a terrible price in terms of social insecurity and economic loss during the inter-war period.

ALVIN H. HANSEN

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La France devant la Reconstruction Economique. By ROBERT MOSSÉ. (New York: Brentano's. 1945. Pp. 113. $1.00.)

This essay is an interesting, if impressionistic, sketch of the French economy before the war and of the outlook for the future as it appeared in October 1944 in the first flush of liberation. Although intended for popular consumption, it is nevertheless well disciplined and fairly comprehensive and reflects the author's background as a professor of economics in both France and the United States and as an economic adviser in various French ministries.

M. Mossé's picture of the pre-war French economy and its present prospects is characterized by an emphasis on certain intangible qualities, in some of which he sees a measure of compensation for the more conventional quantitative standards of successful economic activity, according to which France must accept a modest rank behind the great powers. Among the strong merits of the pre-war French economy he lists the qualities of "moderation" (small-scale enterprise in both agriculture and industry, suspicion of the grandiose); "harmony" (balance between industry and agriculture, absence of single-crop farming, relative abundance of many important raw materials), and a rather mysterious *efficience,* which would appear to be a characteristic Gallic aptitude for drawing a high degree of comfort and satisfaction from a relatively low standard of living combined with considerable leisure. The author's description of the capacity of the French to enjoy the simple pleasures of the poor may be of some interest as a footnote to the literature on the pitfalls of international comparisons of national income, but it has somewhat the air of certain American magazine articles in the early 1930's which sought to prove by eye-witness accounts the deep satisfaction which could be derived from the simple life enforced by the depression.

In contrasting pre-war France with other countries M. Mossé uses a rather sweeping brush, although several of his observations are penetrating. He sees France as having escaped the vicissitudes of Germany's hyperinflation after World War I and having avoided the latter's mass unemploy-

ment and excessive industrialization. Unlike the United Kingdom, France avoided an excessive dependence on imports, striking inequality of incomes, and vast distressed areas. Lacking the grand scale of the United States and the Soviet Union it steered clear of the extremes of prosperity and depression, the monotony of specialization, and the social insecurity of the former, while preserving a sounder evaluation of the present against the future than was possible under the forced pace of industrialization in the latter. Contrasted with Spain and Italy, pre-war France strikes M. Mossé as a land of prosperous peasantry, its center of gravity in a well-established middle class, moving slowly but steadily in the direction of higher levels of prosperity and industrial development. This rather rosy picture glosses over some of the difficulties resulting from the losses of foreign assets after the last war, the problems attendant on the devaluation of the franc, and the heavy burden on the economy of the military expenditures during the thirties.

The major defect counterbalancing France's pre-war economic virtues was, in M. Mossé's view, an almost Mohammedan spirit of resignation expressing itself in a fear of economically sound large-scale enterprise, either public or private, an aversion to innovations, and a bias against technology. While there is no attempt to explain "why France fell" in either economic or other terms, it is evident that this appraisal is intended to account for more than the merely economic difficulties of pre-war France. It would be interesting to have a more thoroughgoing examination of the economic manifestations of this attitude of resignation than is given in the limited compass of this essay. In the material recently released by the French government in connection with its application for a loan from the United States we have, however, several illustrations of the lagging efficiency of the French economy, which on this analysis would be attributable in large measure to the deep-rooted lack of enterprise of the French businessman, which was in no way compensated by the *élan* of the civil service. For example, the productivity of industrial labor in the United States increased by 330 per cent in the period 1900-1938 while in France the increase is estimated to have been only 130 per cent. The price of "moderation," "harmony," and *efficience* was apparently paid in low productivity and low incomes.

M. Mossé's account of the outlook for the future is naturally conditioned by his appraisal of the impact of the German occupation. The developments of the past year and a half would appear to confirm his judgment that the main French problem lies in the field of long-range reconstruction rather than in the immediate crisis of relief and rehabilitation faced by the counries of eastern and southern Europe. This question M. Mossé discusses largely in psychological terms rather than in concrete economic proposals. Although it is difficult at times to know whether he is describing the situation as it is or as he would like it to be, he credits the collapse of France and the German occupation with having administered a sort of shock treatment which will break the bonds of stagnation as far as the reactionary attitudes toward technology and economic experimentation are concerned.

On the direction which French economic policy will take, M. Mossé's judgments are cautious and moderate. In fact he inclines to the view that the restraints of war-time and the occupation may produce a strong reaction against collectivism. It is premature to pass judgment on this appraisal, but there are some indications in the recent nationalization of gas, electricity, insurance, and part of the banking system that the war has done more than create an aversion to direct governmental participation in economic activity.

Generally, M. Mossé's views on economic and social policy are not dissimilar from those associated in this country with the name of Professor Hansen, and the influence of recent Anglo-American thinking is evident in his recommendation of a national production budget, to be sustained by appropriate fiscal measures, and a mixed economy with adequate consideration for the political virtues of private enterprise. His judgment that "for the moment liberty has an incontestable priority in the preoccupations of the French over social justice" (p. 103) is an interesting commentary from someone described in the preface as an "economist of the left." And he adds a refreshing note of realism to the discussion of whether France is "going left" in observing that it is difficult to imagine French farmers organized into collectives in the Russian fashion.

The current preoccupation of the French government with a loan from the United States and the ambitious plans of industrial development associated with the name of M. Monnet are not reflected to any extent in this book although they might be taken as evidence that, after a belated start, the effect of the shock treatment is beginning to appear. There is mention of the necessity of raising the productivity of French industry and of doing away with agricultural protectionism, particularly in the case of wheat. But the crucial question of how far France should go in the direction of industrial development and the implications of the answer for the political as well as the economic life of the country are not developed. If the present plans are pushed, the industrialization of France will necessarily change the balance between industry and agriculture, involving a greater dependence on imports and presumably some loss of the qualitative virtues which M. Mossé values highly. The question of how far in this direction France can profitably go is, of course, bound up with political and economic developments beyond her control, and it is not surprising that this book does not provide a definite answer.

One minor but significant recommendation that M. Mossé makes is for the improvement of French economic statistics and the development of comprehensive economic analyses to furnish the basis for effective governmental policies. The development of national income and related statistics in France has been long overdue and it is only to be regretted that it may have required a national disaster to stimulate action to produce them.

WALTER A. CHUDSON

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Statistical Methods; Econometrics; Economic Mathematics; Accounting

The Fundamentals of Accounting. By DONALD H. MACKENZIE. (New York: Macmillan. 1946. Pp. 683. $4.00.)

Many instructors of accounting have in recent years either watched or taken an active part in the formulation and presentation of accounting principles. Scores of articles have appeared in the accounting journals and noteworthy contributions have come from the releases of the Executive Committee of the American Accounting Association, the American Institute of Accountants' committee on accounting procedure and the Securities and Exchange Commission. It must be assumed that these accounting instructors have hoped that the new textbooks would present materials which would enable accounting students to reap the benefits sown by these valuable contributions to accounting thought. As one reads the preface of Mr. Mackenzie's new book, he is led to believe that his hopes have been realized.

The author states in his preface: "The development of the fundamentals of accounting as presented in this volume follows the philosophy of the Executive Committee of the American Accounting Association." He adds, "The subject is developed from defined concepts of cost and revenues . . . . From these concepts the profit and loss statement and the balance sheet are developed. This means that the fundamentals of accounting are not developed from the balance sheet and the balance sheet equation as is usually the case."

Emphasis on costs and revenues and the matching of costs against revenues to determine profit is indeed in keeping with modern accounting thought. The American Accounting Association's monograph *An Introduction to Corporate Accounting Standards* by W. A. Paton and A. C. Littleton stressed this aspect of accounting. Textbooks in the past have largely obscured this aspect by the stress given to the technical phases of statement preparation. In reality, the emphasizing of costs and revenues is an emphasizing of the periodic aspects of accounting, *i.e.*, the determination of revenue for a particular segment of the life span of a business, the determination of the costs expired in obtaining this revenue, and the determination of those costs to be carried over and applied against revenues of future periods. Accounting statements are the products of this periodic aspect of accounting and if it were not for the fact that the life span of a business enterprise is cut up into these accounting periods, accounting problems would be greatly minimized. Students of accounting must be made aware of this fact if they are to appreciate the problems faced by accountants. The use of the cost and revenue approach may accomplish this purpose.

Mr. Mackenzie, however, is hardly convincing when he states that, "under the cost and revenue approach, the equation and double entry bookkeeping become incidental to the fundamentals of accounting." It is difficult to get around the fact that expense and revenue accounts are derived from

the exchange of assets. It cannot be denied that revenue is measured by assets received while expenses are measured by assets expired. In fact, Mr. Mackenzie puts it this way: "Thus, the revenue accounts show the amount the assets are increased as a result of revenue transactions, and the expense accounts show the amount the assets are reduced because of these transactions" (page 68). And again (page 124), "As a result of revenue transactions assets are acquired, but other assets are expended. If the assets received are greater than those expended, a profit is made; if they are less, a loss is incurred." This would indicate that the author, too, believes that the underlying divisions of accounting data are still assets and equities. As further evidence of this belief, use of the conventional balance sheet approach is postponed only one chapter. The usual introductory chapter on The Nature of Accounting is followed by a chapter on Revenues, Expenses, Profits, and then comes the traditional chapter on The Balance Sheet. This in turn is followed by rather standardized chapters dealing with the development of the double entry system and the various bookkeeping techniques and mechanisms.

The above comments should not be construed so much as a criticism as to point out that in the main the author has not made a radical departure from established practice in presenting the basic subject matter of accounting. He should be commended, however, for the serious effort he has made to present certain controversial subjects. Such topics as inventory valuation, treatment of bad debts, purchase discounts, etc., are not lightly brushed aside but are given a fair and comprehensive treatment. The chapters dealing with cost accounting are particularly comprehensive and discussions of such important matters as fixed and variable costs, increment and decrement costs, out-of-pocket costs, price policies, etc., are included.

The arrangement of the text is such that it is readily adaptable to either the regular two-semester introductory accounting course or the one-semester survey course offered by some universities. The material is so presented that the instructor may emphasize the theoretical, managerial or bookkeeping features of accounting. Each chapter is followed by ample and well-chosen questions and problems for class discussion as well as numerous problems for home or laboratory work. The data for four practice sets are included at the end of the text and ruled forms are available for the student's convenience in handling the laboratory problems.

To this reviewer Mr. Mackenzie's book is a significant addition to the many textbooks available to instructors in elementary accounting. He has demonstrated in a thoroughly understandable style that he is aware of the recent developments in his field and has presented a book which will provide students not only with a knowledge of accounting techniques but an understanding of the uses and limitations of accounting data.

Rufus Wixon

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National Income and Product; Income Distribution; Consumption Statistics

Income from Independent Professional Practice. By MILTON FRIEDMAN and SIMON KUZNETS. (New York: Nat. Bur. of Econ. Research. 1945. Pp. xxxiii, 599. $4.50)

This volume scores well within the pattern of National Bureau products. Like others, it is nicely executed and done by competent collaborators. Unlike certain others, however, it bulges with analytic discourse and quantitative content in appraisal of institutional settings and derived statistics. Due to want of basic data, the authors center attention upon the incomes of five professional practitioner groups — physicians, dentists, lawyers, accountants, and engineers — and even specialize in the incomes of the first two. They thus secure a freedom of deployment that permits of intensive application of the tools of economic theory, econometrics and statistical methodology in rather amazing degree. The outcome abounds with neat excursions in methodological technique. But more important, the volume also becomes a penetrating review of factors influencing practitioner earnings so that it merits serious attention from all persons who seek facts regarding these incomes.

Allusion to contents suggests the range of interest. The five professions are first considered with note taken, among other things, of the number in each calling and the extent of independent practice, the nature and customs of professional schools and licensing authorities, and the comparative success of persons seeking to qualify for practice. Available sample data on incomes are then scrutinized; this is followed by quantitative comparison of incomes in the professions with other incomes and by detailed study of general income characteristics of each of the practitioner groups. Finally comes analysis of the apparent influence of location—geographical and community-size—and of other factors such as years of training and of practice, specialization in practice, and form of practice, whether sole proprietorship or partnership. The development concludes with a review of changes in income over time. It deals first with continuity in the relative income position of the individual practitioner, based in part upon an attempted isolation of transient as opposed to permanent influences, and second with a review of movements over time in incomes realized by practitioners. Appended are a critical discussion of the reliability of the sample income distributions and a section giving in full the basic data and derived statistical constants.

This reviewer is not inclined to attempt adverse criticism despite definite reservations regarding the failure to incorporate more recent data and the sheer length of a volume that is spun from so limited a central subject matter. Such comments would derive mainly from individual preference. The reader no doubt will wish to reflect for himself upon a number of factual nuggets. One may be the tentative seventeen per cent figure for the excess in physicians' over dentists' incomes that time and costs of training seem to warrant; another, the contrasting finding that physicians' incomes have averaged nearly one-third more than dentists. The differential patterns

of physicians' incomes as analyzed by years in practice, extent of specialization, and size of community also merit reflection.

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Business Cycles and Fluctuations

The National Debt and Our Future: A Look Ahead on the Chase-Hansen-Berle Superhighway to Deficit Spending Prosperity. By ELTON RAYMOND SHAW. (Washington: Shaw Publishing Co. 1946. Pp. 189. $2.50; paper, $1.50.)

The National Debt and Our Future by Elton Raymond Shaw presents an unusual problem to the reviewer. The book is intended to be an argument in popular terms against the various proposals for deficit spending as an element in fiscal policy. One's views on the validity of the author's objective will depend upon one's opinion with reference to the economic programs derived, correctly or not, from Keynesian analysis. My own belief is that the concept of stagnation and oversavings have been so overemphasized as to divert attention from equally or more important problems and to mislead public opinion towards a belief that a simple panacea for our difficulties may be found in legislation, as in the Employment Act of 1946. Accordingly, I have considerable sympathy with what I believe to be the purpose of Shaw's book.

The author, however, admits of no modifications of traditional dogmas favoring annual budget balancing and rapid debt reduction. In his attacks he proceeds by assertion, oversimplification, and not infrequently by personal ridicule. In this, his book is no more subject to criticism than many of the publications of the spending enthusiasts. For example, he quotes and criticises on page 24 a memorandum by Stuart Chase to the staff of the T.N.E.C. in which Chase suggests a technique in the selection of words to describe government spending which, in the opinion of an outside critic, would have the effect of confusing if not misleading the uninitiated. But Shaw's book proceeds along the same lines, though perhaps less subtly. The result does not advance the discussion of any policy on its merits, nor does it lead to clear thinking. The substance of the author's economics is obscured by his attempt to secure rejection of the spending doctrine by establishing a general attitude and point of view in the reader's mind.

Unless careful analysis and balanced judgments are no longer appropriate in popular discussions (and perhaps they have become obsolete), one will prefer such a book as *Economic Stagnation or Progress*, by E. W. Swanson and E. P. Schmidt, which is also written as a popular refutation of the Keynes doctrine as developed in this country, but proceeds with an entirely different tone and approach. We can only hope that such a volume as the outstandingly fine symposium *Financing American Prosperity*, edited by Homan and Machlup, is not above the level of the informed general reader.

Though attention is particularly directed to the dangers of debt expansion

along traditional lines, Shaw also attacks the mature economy and excess-savings doctrines which lie back of the proposals for government spending. He makes use of much recent literature in frequent quotations. He also effectively uses many of the more extreme statements of the Keynesian group, especially on the burdenless nature of a domestic debt.

An appendix reprints the bulletin by Dr. L. Albert Hahn published by the Chamber of Commerce of the United States. This is on a plane so different from the body of the book that it is hard to understand why the two were brought together. In brief, Hahn cites his own earlier advocacy of "eternal prosperity through monetary and credit manipulation" (p. 157) as evidence that he cannot be accused of exaggerated orthodoxy. Since the publication of his *Volkswirtschaftliche Theorie des Bankkredits* in 1920, however, he has increasingly turned to what he calls the "classic theory of unemployment." This theory attributes unemployment to wage rates so high as to prevent full absorption of all available labor. His observations on Continental European developments after 1927, particularly in Germany, have played a large part in his present thinking.

Dr. Hahn refers to what he considers the "paradoxical idea that employment is more or less a function of cost of capital rather than of labor" (p. 171). This in turn rests upon the overemphasis on savings and their use, which leads to what he calls a policy of increasing money wages even at the expense of real wages. Hahn believes that Keynes's argument rests on an assumption that labor is more concerned with money than real wages and that price increases can restore an underlying balance in wage costs. While agreeing with the fact of wage rigidity on the downwards side, Hahn stresses their flexibility upwards and then concludes that "every reflation would thus lead to a new wage increase and every new wage increase to new deficit spending" (p. 178). His view is summarized in the statement that "the idea that not wages but interest rates, and these alone, have to be lowered to incite full employment, has proven to be an illusion . . . " (p. 178).

The denial by Hahn of the possibility of inadequate investments does not appear to the reviewer to be adequate (p. 175). In this respect his analysis seems deficient. However, his emphasis on the importance of wage rates, both nominal and real, is particularly appropriate at the present time when the alleged general need for maintaining consumption spending has been misused as a basis for wage increases which in turn have accentuated the wage-cost-price spiral.

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Public Finance; Fiscal Policy; Taxation

Postwar Taxation and Economic Progress. By HAROLD M. GROVES. (New York and London: McGraw-Hill. 1946. Pp. xiv, 432. $4.50.)

The relationship of this thoughtful and elaborate study to Professor Groves's earlier book on *Production, Jobs and Taxes* (1944) is similar to that

of matrimony to betrothal. Tentative and provisional plans are relinquished. An irrevocable choice is made. The stage is set for a permanent structure. In view of the expert knowledge of the author and his association with the Committee for Economic Development, his tax program deserves both scientific and political attention.

Still, the book covers a narrower subject than could be expected from its title. We are missing a full discussion of the impact of the volume of taxation on economic progress, of the place of taxation in various alternative budgets, of its relation to public spending and to debt management and of its general function as a contractive and an expansionary force and as an economic stabilizer, in other words the role of taxation in postwar fiscal policies. When, in the second to the last chapter of the book, the author turns to Fiscal Policy and the Functioning of the Economy in the Postwar Period, he deals with it as an appendix rather than as a necessary foundation of his program. This attitude cannot be fully explained by the fact that, following the research program of the C.E.D., fiscal-monetary policy was to be discussed by another forthcoming report. In spite of this division of labor, the tax program could have been based on general fiscal considerations. Apparently, Professor Groves prefers a more specific approach. To him, the primary obstacle to post-war economic progress is the lack of integration between federal corporate and personal income taxes. He thus advocates a basic reorientation in this field. Almost two-thirds of the book are devoted to the exploration of necessary changes in direct business taxes and in the personal income tax.

This tax program is not new. It is linked with the best fiscal traditions of the free enterprise system. Since his main concern is with "the selection of tax measures that will least impede production" (p. 349), he is bound to oppose any considerable duplication in taxing business income. In the interest of economic progress, the corporate tax is to be deëmphasized or abandoned. Since, on the other side, the author does not like to run the risk of an unbalanced peacetime budget, other elements of the tax system are to be strengthened. Since Groves shares the traditional predilection of numerous post-classical writers for the personal income tax, it is logical to advocate its extension and intensification. Although death taxes represent another unexhausted tax reserve of the Treasury, they are only his second choice.

Other possibilities are briefly examined and, in general, strongly opposed. Consumption taxes and sales taxes can be reconciled neither with the goal of a high-consumption economy nor with the need for tax-consciousness. Groves's verdict hardly provides for extenuating circumstances. Even during the past century when capital was at a premium and the citizen was not very conscious of his political responsibilities, federal consumption taxes were only "tolerable." "They are less appropriate today and will become still less appropriate as time goes on" (p. 295).

Let us concentrate on the arguments in favor of a deëmphasis or an abandonment of the corporate tax. The reader may feel surprised that such an abrupt turn in tax policies is recommended without previous clarification of a basic question, namely, what social groups, at present, bear the burden of

the corporate tax. Although the book abounds with references to shifting and incidence of the corporate tax, Groves frankly admits that his analysis does not arrive at any conclusion concerning its ultimate economic effects. Whether, therefore, the final result of the suggested change would be a shift in the tax load from rich to poor or *vice versa* "cannot be definitely ascertained." The following argument is characteristic of the experimental character of the program. "Much depends on assumptions as to the incidence of the corporate tax. On the theory that this tax is borne largely by stockholders, the recommendations might mean some shift of relative tax burdens from the top to lower levels of income. If the corporate tax falls heaviest on consumers and wage earners, the opposite conclusion would seem more plausible. On the former assumption, the retention of a moderate independent business levy would make a net downward shift less likely. For political and fiscal reasons such tax is very likely to be retained" (p. 185).

Is it permissible to endorse a decisive change in the American tax structure while being in the dark concerning its economic effects? It seems to me that our answer can be in the affirmative only if any of the three possible incidences of the corporate tax, namely on stockholders, consumers, or workkers, is to be considered as less desirable than an intensification of the personal income tax: (1) the absorption by stockholders because of its greater deterrent effect on risk-taking; (2) the forward shifting to consumers because of its interference with a high level of consumption; and (3) the backward shifting to workers because of its regressive effect. Without an evaluation along these lines the resolution to abandon the corporate tax would appear premature.

As long as the controversy concerning the final burden of the corporate tax cannot be settled, some other propositions also are open to objection.

If "the incidence of the tax is uncertain but in all probability it is divided among stockholders, wage earners, and consumers" (p. 72. See also pp. 28, 36, 66, 109, 110), the present set-up may still be criticized for duplication. In so far as one fraction of the corporate tax would be absorbed by the stockholders, risk-taking capital would be discouraged and a special penalty imposed "at a particularly strategic spot in the economic process" (p. 31). The magnitude of this fraction, however, and consequently of the penalty imposed on investment cannot be ascertained. I do not think that the author should have tried to support his case against the corporate tax by submitting a calculation of this penalty based on the unproved assumption that the entire burden of the corporate tax rests with the stockholders (see Table I, p. 30).

The attack on the corporate tax from the viewpoint of corporation finance is questionable. If the stockholders participate, to an indefinite extent, in the final burden, it is hard to see why the discrimination between bond and stock financing ought to be "substantial" in this case. Groves bases his argument on an assumption he generally denies: "A dollar of income earmarked for the bondholder is paid to him in full, but the profit dollar earmarked for the stockholder is, in effect, cut to only sixty cents. This encourages corporations to issue bonds instead of stock." It seems to me that, by follow-

ing the general trend of the author's analysis, the "unfortunate influence upon corporate and individual decisions" (p. 31) could be evidenced only by accountants and other experts in corporation finance.

Other elements in Groves's tax program run more along the customary lines of thought. Following a careful appraisal of the treatment of undistributed earnings in the United States and Great Britain, he advocates a low-bracket personal rate to undistributed corporate income. The repeal of the wartime and declared-value excess-profit taxes by the Revenue Act of 1945 confirms his earlier written recommendation to reserve this unusual measure for war application only. His opinion that the peacetime employment of the excess-profits tax would endanger risk enterprise and business efficiency has been widely accepted. His suggestion of foregoing the use of a corporate levy as a tool against monopoly is less convincing. His dislike of such a policy is based on three grounds: (1) it is uneconomic to single out efficiency and risk for special taxation; (2) in the absence of price controls, an excess-profits tax may miss its target by being passed on, at least to some extent, in high prices; (3) if monopoly profits should be taxed at all, a personal tax would be far more effective than a corporate tax. The validity of all three arguments is open to question. While leaving this matter for discussion elsewhere, it must be emphasized that the cautious attitude of the author as far as tax measures are concerned does not imply any relaxation in his opposition to monopoly. In political terms, he wishes to shift responsibility from the Treasury to the Department of Justice, to the Federal Trade Commission or to OPA (if this agency should still exist): "The thing to do is to restore competition or to regulate prices" (p. 80).

These critical observations are not intended to detract from the value of an unusually comprehensive study. Groves's mastery in both the general and the technical tax field renders the book an ideal introduction into current discussions. His gift for organizing an almost unlimited amount of facts and figures deserves high praise. The study should be widely consulted by the many tax lawyers, tax accountants, fiscal scientists and economists who, in an era of fast progressing tax specialization, cannot afford to go back to all the primary sources. Even opponents of his tax program will welcome the succcinctness of his arguments.

Fritz Carl Mann

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Guideposts to a Free Economy. By Harley L. Lutz. (New York: McGraw-Hill. 1945. Pp. ix, 206. $2.00.)

Tax Program for a Solvent America. By the Committee on Postwar Tax Policy; Harley L. Lutz, Director of Research. (New York: Ronald Press. 1945. Pp. x, 278. $3.00.)

The first of these two books on post-war taxation and fiscal policy comprises a series of short essays, many of which first appeared in *The Tax Review*, a Tax Foundation publication. The series begins with a comment on the national income in relation to employment; proceeds to consider the in-

cidence of business taxes, theories of tax distribution (progressive taxation), and the sales tax; then concludes with treatment of the social security system, national planning, and other aspects of fiscal policy.

The author's viewpoint is suggested in the following propositions: Rigid wages and progressive taxation are the principal causes of mass unemployment. "The cases of monopoly are so rare as to be the extreme exception rather than the rule." "Progressive taxation is the most effective possible way of softening the enterprise system before moving in to take it over into a collectivist regime." The most efficacious means of taxing small incomes is the retail sales tax. "It requires a very low estimate of the intelligence of the people to assume that they would go on saving indefinitely" after the possibilities of profitable investment had been saturated. Economic planning is "a short cut to serfdom." "Functional finance" is "not shocking" but "merely funny"; its error lies in the assumption that changes in the money supply will suffice to determine purchasing power, ignoring the counterbalancing factor of turnover. A simple recipe for prosperity is: "If you want to make a dollar by any honest means you are free to try, and if you succeed you may keep it."

The essays are a succinct, vigorous, and interesting statement of the viewpoint of so-called "sound finance." They would have been more persuasive, in the reviewer's opinion, if they had shown some awareness of the abuses of the "enterprise system," and if they had not allowed so many half-truths to go unqualified. Nevertheless, a new brief for what was once at least the orthodox view of economics, including a defense against its Keynesian attackers, is definitely useful.

The second book submits a post-war tax plan devised by a committee of which Professor Lutz was director of research. As to broad fiscal policy, the report recommends an annually balanced budget, regular retirement of debt, conservative public expenditures, and a diversified tax system. Balancing the budget over the business cycle, with surpluses from the good years offsetting deficits from the bad, is rejected as the high road to "creeping inflation." The possibility that unemployment might be caused by oversaving is ignored. All will be well if enough incentive is allowed the risk-taker and a high level of business confidence is maintained.

As to specific tax measures, the personal income tax with a broad base and high standard rate should be the principal reliance. Corporations should be taxed at the standard rates applicable to individuals, and a credit should be provided to prevent the double taxation of equity earnings. A carry-over of business losses and more freedom in deducting depreciation should be allowed.

Less generally acceptable will be the view that undistributed profits should not be specially taxed, particularly if present treatment of capital gains is to continue as recommended. The committee makes no suggestions regarding tax-exempt securities and allows present abuse of joint and separate returns to go unchallenged; these are considered minor issues. A broad system of federal excises is advocated for diversification, with a federal retail sales tax held in reserve should it prove fiscally necessary. Most doubtful of all is the recommendation that the death tax be surrendered

by the federal government to the states where interstate competition can be relied upon to protect the wealthy. (To say the least, this hardly seems essential to preserve "the vigor and vitality of the nation's economic system.")

The supporting arguments for the above and other recommendations include data comparing British and American sources of revenue and concerning sources of equity capital. Yield estimates of various combinations of taxes with various assumptions as to the national income are provided. The quantitative work appears to be carefully done, though the explanation of techniques is somewhat sketchy. Sections on federal tax administration and federal-state fiscal relations are also presented. The report is well written and ably reasoned.

Many differences in economic opinion arise from different interpretations of our recent experiences in the 'twenties and 'thirties. Neither experience ended well and wise policy requires avoidance of the errors of both. In the reviewer's judgment, these books would return us to the hard trail we started in 1920.

HAROLD M. GROVES

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Money and Banking; Short-Term Credit

The Bank of England: A History. By SIR JOHN CLAPHAM. (Cambridge and New York: Cambridge Univ. Press and Macmillan. 1945. Two vols. Pp. x, 305; vi, 460. $7.50.)

As Sir John Clapham wisely says, "a banking system is so closely associated with . . . what is almost the oldest and the most jealously guarded function of the state, the issue of money, that governments can seldom afford to leave it entirely unlicensed and uncontrolled." This fact is most notably true of a central bank. Such institutions are essentially monetary agencies, only incidentally and secondarily banks.

The inevitably close association between a central bank and the government is amply demonstrated in Sir John's *The Bank of England*. Not only was the Bank born of the government's need for funds, but throughout its history it has continued to provide loans to the state; and when monetary difficulties have arisen, the Bank has invariably consulted with and been guided by the government. At times the Bank has demurred to governmental demands, but seldom with success, and then only with respect to minor matters. The Prime Minister, Lord North, as early as 1781 described the Bank as "from long habit and usage of many years . . . a part of the constitution." In 1797 the Bank took Exchequer Bills, with a "gentleman's understanding" that they would not be thrown on the market and thus forced to a discount. During January, 1846, the Governor of the Bank was keeping the Chancellor of the Exchequer informed every few days. In 1857 Dobree, the Deputy Governor then in charge of the Bank, "was getting the bad news from New York, and he was in daily touch with Sir George Cornewall Lewis, Chancellor of the Exchequer."

Since a central bank is a monetary agency, our chief interest in the development of the Bank of England must lie in the monetary policies it has followed, and in its failure ever to evolve a consistent rule of action beyond that, apparently, of protecting its own reserves. In spite of the very welcome and imposing study that Sir John has presented, economists will feel some measure of disappointment, because information in regard to the policy of the Bank is meager. Perhaps this result should have been expected. The directors of the Bank have been men whose time and energies were taken up largely with their own affairs—Henry Thorntons and David Ricardos are rare among men of business. In any case, one is impressed with the sketchy character of the information on matters of policy that is revealed by the records of the Bank.

Typically, the record consists of a bald statement that a given action was taken. Thus, when the action of the Court in 1819 denying that the Bank could, by reducing its issues, cause the exchanges to become favorable was reversed in 1827, the later action was recorded in a marginal note to the earlier action—"rescinded, 6th December, 1827." Sir John writes that in 1907 the Court, *as usual*, "recorded no motives for its minutes." Such facts are meagre data for the reconstruction of the policy of the Bank.

The Bank, however, consistently came to the aid of the market in time of crisis; but whether this was a matter of a definitely formulated policy, or of opportunistic response to bleak necessity, is not made entirely clear. One infers that without much doubt it was the latter. "The year 1763 was one of international crisis and the Bank was doing its utmost to give help by free discounting." "We do know that the Bank was discounting liberally in June [1772], especially just after the crisis." "Lancelot Holland the Governor and Newman Hunt his Deputy reported that they had lent in 1866 an 'unprecedent sum' of upwards of four millions sterling to bankers, billbrokers and merchants, upon government stock and bills of exchange."

On occasions the Bank attempted to prepare for anticipated trouble. Sir John relates that "early in 1783 it limited the note issue by curtailing discounts." And again: "All through the year [1796] the Bank had been limiting its discounts with a view to reducing its note issue and lessening the risks of an internal drain. The policy would also tend, by its restrictive influence on the home price level, to help the restoration of the exchanges; but it is not certain that this was an object deliberately aimed at." Sir John might safely have written, I believe, that there is little probability that "this was an object deliberately aimed at."

In later years, more particularly after 1844, the anticipatory action of the Bank was largely reflected in its rate policy. Prior to the passage of Peel's Act, there was little attempt to use Bank rate as an instrument of control. There were but five changes in the discount rate on inland bills during the whole history of the Bank before 1822. The rate was five per cent throughout the period of the restriction. The first attempt (with the possible exception of 1822) of the Bank to use its discount rate for purposes of control came during the crisis of 1825, when in December the rate was raised from

four to five per cent. The application of the usury law to three months' bills was repealed in 1833, and thereafter Bank rate was changed more frequently although there were nevertheless five years from 1834 to 1844 inclusive in which no changes took place. Since the passage of Peel's Act, resort to rate changes has been frequent. Between 1844 and 1914 there were only two years, 1851 and 1895, in which no change took place.

The pattern of rate policy since 1844 is fairly clear. When the Bank anticipated trouble it raised the rate, and during crises it invariably took the same action. Nevertherless, what theoretical defense the Bank may have had for this action Sir John has not told us, presumably because the records of the Bank had no disclosures to make on this subject. We infer both from the action of the Bank itself and from the literature of the period (by which the directors must have been influenced in some measure) that the chief aim, probably the sole aim, of rate manipulation was that of protecting the reserves of the Bank. Bagehot could hardly have extended his criticisms to include the actions of the Bank during crises. After 1844 it raised its rate but expanded the volume of its discounts at such times, which is precisely the action that Bagehot thought proper for a central bank.

Through the years the Bank engaged in a great variety of operations, many of which reflect a wide departure from those supposedly "sound" principles of banking so much extolled from Adam Smith to H. Parker Willis. In this difference of opinion I must take the side of the Bank. At times the Bank has loaned on mortgages—especially in 1824. It has made advances to the city of London and to metropolitan authorities; to municipalities; to colonies; to various other public authorities—and for "permanent" improvements; but, most dreadful of all, to stock-exchange customers. Besides all this there has been the debt of the government to the Bank and the discounts and advances. In addition it "issued" and "managed" the debt of the British government and of other public agencies.

In 1850 the request of the secretary of the General Board of Health for a long-term loan for sanitary improvements was rejected, partly on the ground that "loans were usually only for ten or twenty years, and repayable by annual installments." "The Bank of 1880 was once called 'an investment bank,' because of its tiny portfolio of bills and its great holding of other securities." Advances to stock exchange firms "for the account" became an important source of revenue during the 1890's and were approved by the Court in 1900. Later, however, some of the officials wondered about this, but not for reasons that would have met the approval of those misguided economists who hold that only short-term commercial loans are appropriate for a bank—central or not. They felt that it was not proper for the Bank to compete in this manner with the London bankers when funds were plentiful. Nevertheless, such loans continued to be a steady source of revenue down to 1914. Throughout its history, however, the Bank has of course discounted bills and made short-term loans, although in widely varying amounts.

There are occasional references which reflect an indefensible attitude by the Bank on the subject of liquidity, and Sir John himself seems to have taken the same position. He implies approval of some short-dated tallies

and orders held by the Bank on November 10, 1696, on the ground that they were "payable within the year and so reasonably liquid." "There had been [in 1825–26] every need for liquidity: the bank would no doubt have been quick to turn its mortgages into cash, had that been a possible course." The Bank officials were confident in 1847, inasmuch as "for each of the two coming weeks they have a million and a half 'going off' —good paper that will bring in cash." "Semi-permanent" stock-exchange loans (as opposed to "liquid" loans "for the account") in the 1890's are condemned. Apparently the condemnation comes from both the Bank and Sir John. Seemingly one of the hardest of all lessons for central bankers to learn is that the only asset which is liquid for them in a crisis is cash.

The Bank's attitude toward a "Chancellor's letter" suspending the Act of 1844 in crises has typically been one either of opposition, or of unwillingness to ask for it. Seemingly the Bank has taken a stubborn pride in muddling through a crisis without this kind of governmental assistance, quite oblivious to the fact that a lifting of the restrictions of the Act would make possible a degree of assistance to the market that would undoubtedly improve public confidence. To an inquiry as to whether they wanted a relaxation of the Act in 1847, the Bank officials replied that they were "perfectly prepared to maintain the law." In 1866 Gladstone stated that "he had 'not the least reason to suppose' that the Bank would ask him to suspend the Act." The Bank was offered a Chancellor's letter by Goschen in 1890, but it was declined by Lidderdale, the Governor. This point of view reflects a shocking disregard or ignorance of the responsibilities of a central bank.

Sir John has not told us, and we cannot infer from what he has said, whether the Bank prior to 1914 ever evolved a consistent concept of its responsibilities or of the course of action which it should pursue. On the one hand, it clearly did come to the aid of the market during crises, and on occasions apparently tried to ward off impending trouble. Sir John tells us that in 1889 "the Governor and Court were watching the exchanges"; although one is left in doubt as to whether this is more than an inference, well-founded no doubt, if that it is. But was the Bank chiefly concerned with its own safety, or was it pursuing a policy which it believed would promote the public welfare? Quite probably there was a mixture of the two motives.

On the other hand, there was the attitude of Thomson Hankey, onetime Governor, who stoutly maintained that the other London banks should not look to the Bank in critical times; there was no public acknowledgement of its public responsibilities, nor has Sir John revealed any record within the Bank of any consciousness of such responsibilities; and there was the strange aversion to a "Chancellor's letter" during crises. An anonymous memorandum of 1830 to the branches, which was never sent out, states that bankers must not at that time (during an outflow of gold) expect help beyond the amount of their existing balances and discounts with the Bank. In 1899 the Inspector of Branches "wondered whether the Bank's dual position could be maintained. Was it to be 'duty to the public' and care of gold, or duty to the proprietors . . . and the dividend?" One infers that the Inspector was very definitely of the opinion that it should be the latter.

But granted that the Bank did realize its public responsibilities, there is no evidence that it ever formulated a policy for itself which went beyond the protection of its gold reserves and the maintenance of convertibility of the currency. I can find in this work no evidence in support of the assertion sometimes made that before 1914 gold standard countries were in fact on a sterling basis which was managed in London.

I have considered primarily the monetary policies of the Bank, but Sir John's work is not devoted so exclusively to this question. Indeed, my chief criticism is that he has not given sufficient consideration to matters of policy, although it may be conceded that in part the paucity of relevant material in the Bank records is responsible. There is much information on such topics as the organization and business of the Bank, the proprietors of Bank stock, the note issues, the relationships between the Bank and the South Sea Company and between the Bank and the bankers, the official personnel, and other topics. All this is written in a surprisingly interesting style when one reflects that the subject matter is such as to invite a presentation of deadly dullness. In fact, at times the narrative becomes almost entertaining—this, for example: "In this clash the chief antagonists were unequally matched, Bagehot with as good a head and as good a pen as any in England, Hankey with—well—neither."

We may, we should, recognize that the Bank of England has been a pioneer institution; that its officials have been men of affairs who have had thrust upon them duties for which they had training and knowledge only insofar as pertained to the routine operations of the Bank; and that the literature upon which they might have relied for quidance has likewise been in a state of immaturity and development. When we have recognized these facts we must concede, I think, that the Bank has had a most remarkable history, and that it has met its responsibilities with no mean measure of success. Nevertheless, we are not too uncharitable if we look with a critical eye, and even from the standpoint of knowledge not available to the officials of the Bank, upon its operations; and if we point to its failures and blunders in an attempt to increase our own wisdom in the management of our monetary affairs.

Unquestionably *The Bank of England* will become the standard work on its subject. It is a fitting opus to close a distinguished career. Sir John Clapham died on March 30, 1946.

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International Trade, Finance and Economic Policy

International Trade and Domestic Employment. By CALVIN B. HOOVER. Prepared for the Committee for Econ. Development. (New York: McGraw Hill. 1945. Pp. xii, 177. $1.75.)

This is the fifth of the research studies prepared for the Committee for

Economic Development.[1] The body of Dean Hoover's report consists of description and analysis of a program for the United States which in the long run would offer the best promise of a freer and larger flow of goods in international trade.

The study is primarily intended for the general reader, for whom it details and analyzes an array of measures for the implementation of a general policy which is widely subscribed to by American economists, probably by a large majority.

The study recommends a program consisting of the following elements: participation in both of the organizations proposed by the Bretton Woods Conference—the International Monetary Fund and the International Bank for Reconstruction and Development; securing international agreements for the elimination, insofar as possible, of international cartels and effective national and international regulation of those not found possible to suppress; lowering of our protective tariff in conjunction with reciprocal action by other countries and refraining from using the tariff as a means of protecting our war-born industries from foreign competition; settlement of Lend-Lease on a basis that would not disrupt the general structure of the international balance of payments; maintenance of only such of our merchant marine as is considered necessary for national security; and carrying out measures for attaining and maintaining a high level of domestic employment while collaborating in international policies that would promote high levels of employment in other countries.

All of the proposed actions have been extensively debated and some of them have been substantially carried forward by the United States government in the year since Dean Hoover's report was completed. Readers of the *American Economic Review* are doubtless familiar with more elaborate analyses of the proposed measures than Dean Hoover's report provides. It seems appropriate, therefore, that the remainder of this review be devoted to general aspects of his study.

In discussing the causal relations between the levels of United States foreign trade and domestic employment, Dean Hoover indicates that the main order of the causation runs from the latter to the former. The possible influence of the level of our international trade on domestic employment is not analyzed, notwithstanding that the title of the report suggests that this would be its main concern. The author presumably does not believe that the level of our international trade has a determinate influence on either the average level or the stability of domestic employment. The economic advan-

[1] The Research Committee of the Committee for Economic Development has issued a statement on national policy covering the same field as the report under review—*International Trade, Foreign Investment and Domestic Employment, Including the Bretton Woods Proposals.* Except with respect to participation in the International Monetary Fund, the recommendations of the Research Committee conform closely with those of Dean Hoover's report. The statement of the Research Committee recommended that certain functions of the International Monetary Fund as proposed by the Bretton Woods Conference be carried on by the International Bank for Reconstruction and Development, and that the establishment of the fund be postponed until more normal conditions of currencies and foreign exchange are achieved.

tages of a freer and larger flow of goods in international trade are attributed solely to the increased efficiency of production realizable from more extensive international specialization and division of labor. Dean Hoover properly refrains from arguing that increased foreign trade would make a dependable contribution to the solution of our problems of unemployment.

In line with the reasoning presented in the preceding paragraph, the report indicates that our policies in the field of foreign trade and finance are not major factors that will influence attainment and maintenance of a high level of domestic employment. Dean Hoover believes, however, that the adoption of measures that will assure a high and stable level of domestic employment is essential if the other elements in his program are to have substantial advantages for this or other countries. In fact, he finds that unless the prospect of depressions is eliminated, policies which contemplate freer and larger international trade are not likely to be adopted by other countries or long maintained here.

The study seems to the reviewer to be at its weakest in reference to the balance of payments problem. Though in some places it suggests doubt about the matter, on the whole it seems to imply that, if the United States and other important trading countries participate in the proposed international monetary and banking organizations, and if severe depressions are avoided, active and passive balances of international payments for this or other countries need not cause serious difficulties. It is to be hoped that this view may turn out to be in accord with the realities. The reviewer, however, is not confident that it will. The persistence of the active balance of payments position of the United States during the thirties may well have been attributable to economic factors which are not capable of easy readjustment. The value of our import trade may therefore not adjust itself more or less painlessly to provide foreigners with the dollars necessary to pay for United States exports and meet service on United States investments abroad. And this failure may occur even though the program recommended by Dean Hoover is pursued.

On the whole, it appears that the author simply assumes that our imports will expand in value commensurately with our exports; he does not examine whether that result is reasonably to be expected. The study does not analyze the question of what adjustments may be needed if the anticipated and desired greater exports from this country are to be maintained on an economic basis and the service on United States investments abroad to be met. Nor does it consider the procedures by which such adjustments if needed could be brought about—whether, for example, revision of exchange rates would be effective and feasible. An examination of this matter, which doubtless might not have led to assured conclusions, is probably not to have been expected in the type of study Dean Hoover undertook. Nevertheless, from the point of view of the reviewer, the absence of such an examination is a deficiency of the report.

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U. S. Tariff Commission

Commercial Policy in the Canadian Economy. By ORVILLE JOHN MCDIARMID. (Cambridge: Harvard Univ. Press. 1946. Pp. 397. $4.50.)

In this work, the author not only presents the historical facts of Canada's commercial policy from 1763 to 1939, but also attempts briefly to analyze the effects of that policy on the economic and industrial development of Canada. While he emphasizes the tariff as the main instrument of trade policy, he by no means overlooks "such complementary techniques as subsidies, shipping regulations, and exchange and currency matters."

The history of tariff changes is presented in such minute detail that its reading may well befuddle, and will almost certainly bore, all except those interested in a highly particularized account. For them, the work is a welcome and valuable addition to the very limited amount of secondary material previously existent in this particular field of research.

The more general reader, interested chiefly in such aspects of the tariff as its regional incidence, its influence on the development and structure of Canadian industry, its contribution to monopoly and monopolistic practices, its effects on the national income and on cyclical and secular patterns of the economy, and its repercussion on Canada's external relations, will probably be content to "hit the high spots" and then concentrate on the last chapter where these problems are briefly touched upon.

Nowhere, at least during the present century, has the question of regional tariff incidence been fought over as bitterly as in Canada. The problems of war and wartime prosperity combined to shelve, temporarily, that conflict. Now that peace has been reëstablished on the external front, domestic harmony is again threatened as the recent Dominion-Provincial Conference fiasco showed. The facts that primary production in Canada is regionally and provincially concentrated and that the Provinces exercise considerable constitutional power over economic matters guarantee the continuance of a sectionalism that has bedevilled the country since Confederation. A perfect case in point was contained in the submission of the Province of Saskatchewan to the Royal Commission on Dominion-Provincial Relations: "While the tariff has given little support to the few small manufacturing industries which Saskatchewan does possess, it has imposed a heavy annual charge or tax upon the one great unsheltered export industry of the province. The Saskatchewan wheat growers have been compelled to purchase goods in an expensive protected market with the proceeds of exports sold in the competitive markets of the world."

The author admittedly attempts no final answer to the question of how the direct burdens and benefits of the tariff have been distributed among the various areas and provinces of Canada but contents himself with a cautious middle-of-the-road statement in the following words: "The view commonly held that individual incomes have been drastically reduced and standards of living lowered in eastern and western Canada because of the tariff is probably unfounded. The tariff, in its protective aspects, has had two important consequences to the economies of the Maritimes and western provinces. By increasing the cost of certain producers' equipment it has limited the

exploitation of marginal lands, mines, forests and fisheries. The result has been to reduce gross income and perhaps also to limit the population that the primary industries of these provinces can support. Secondly, the tariff has reduced the real incomes of the people of those provinces during periods of drastic price collapse in export markets, inasmuch as it has contributed to inflexibility of durable consumers goods prices. The terms of exchange have undoubtedly been weighted in favour of central Canada [Ontario and Quebec] by the tariff, more so in depression than in prosperity, but the quantitative extent of this disability, we believe, has not been as great as frequently assumed. The subject, however, awaits more specialized study." Let us hope the author, or another equally well equipped, will produce that study in the near future.

This reviewer agrees wholeheartedly with the author when he states that "the regional incidence and benefits of the tariff are questions fundamental to the preservation of national unity." That national unity is threatened today and the tariff is a basic factor in the situation. In a democratic state what people believe, regardless of its actual validity, is of the greatest political importance. The reviewer would gladly have foregone much of the detailed statistical material which abounds in this work in return for further enlightenment on the problems stated and for answers to the questions asked. Such a treatment of the subject would be widely read and might well have a salutary effect on the hot economic tempers prevailing in Canada today.

Mr. McDiarmid concludes, rather optimistically the reviewer thinks, that: "As in no previous period in the tariff history of Canada,the prospect for the solution of the fundamental economic problems of the Dominion without the aid of substantial barriers to the free flow of international trade appears to be economically and politically possible." It is true that Canada is now a creditor nation and theoretically should be prepared to accept an unfavourable visible balance of trade. But she may attempt to follow the policy of the United States during the twenties to have her economic cake and eat it too. Her manufacturers are both well organized and highly experienced in the art of tariff lobbying. The Conservative Party, historic defender of the higher tariff, recently has been in the political doldrums, lacking both a distinctive program and a solid following. It may seek simultaneously to acquire both by resurrecting its earlier stand on the tariff. Furthermore, Canada's basic exchange problem, arising out of her international trade, is the conversion of British sterling into American dollars. She must continue to export heavily to Britain and, if the difficulty of conversion continues, she may well seek to reduce her decidedly unfavourable trade balance with the United States through tariff action. While economic sanity is a necessity to the well-being of the post-war world, the mere necessity of it by no means guarantees its appearance.

The reviewer has already indicated his evaluation of the material in this work. Unnecessary footnoting further handicaps a style heavily encumbered with details. For example, why quote with appropriate footnoting such an economically banal statement as "At the time of Confederation Can-

ada was just beginning to emerge from the commercial into the industrial age" (p. 131)? And, in the absence of a formal bibliography, the inclusion in the index of authors referred to only in footnotes would aid the more specialized reader in his quest for material in the field. But these are minor flaws and detract but little from a work which has made an unquestionable contribution to knowledge of both the political and the economic history of Canada.

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Public Control of Business; Public Administration; National Defense

Over-all Report (European War). (Washington: The United States Strategic Bombing Survey. 1945. Pp. 109.)

The Effects of Strategic Bombing on the German War Economy. (Washington: The United States Strategic Bombing Survey. 1945. Pp. 286).

The United States Strategic Bombing Survey was established at the end of the year 1944, with ample means to make studies of every aspect of the effects of air bombardment upon the enemy systems. The conduct of the the Strategic Bomber Offensive by the RAF and the VIIIth and XVth US Air Forces, had been accompanied by lively controversy on a number of issues of policy and strategy. At the same time a prodigious volume of Allied resources had gone into the enterprise of destroying the enemy's power and will to fight. Fortunately some of those engaged in it foresaw the value that would accrue from a thorough and unbiased study of the effects of bombing.

The Survey had a table of organization providing for no less than twelve hundred personnel, including several hundred civilian specialists. Its Chairman, Mr. Franklin D'Olier, was responsible directly to the Secretary of War. The study had the highest of auspices, and was able to get in ahead of most other intelligence operations, thanks to its own planes and jeeps, and very energetic personnel. Altogether it was a remarkable enterprise, certainly the best equipped of those charged with analysis of a major phase of the war. Its field teams followed the armies into Germany and examined physical damage, studied private and government records, and interrogated individuals. The *Over-all Report* was issued at the end of September 1945 and the larger report on *The Effect of Strategic Bombing on the German War Economy* a month later.

The two studies under review here are remarkable documents. They are at present, and will probably long continue to be, the best presentations available to Americans on the scale and character of the war effort of Germany. Each of them reviews the impact of the bombing campaign against the priority target systems including aircraft, bearings, oil, rubber, and other industries. The *Over-all Report* includes summary data on a num-

ber of other aspects of the problem such as the weight of attack, the bombing of transportation, and on the effects of "area raids" in damage to life and property. The larger report on *The Effects of Strategic Bombing on the German War Economy* is concerned solely with the effect on war production, and to this end gives data concerning the German war economy comparable to the data now available on our own war production. Since the *Over-all Report* contains some data of great interest which is not covered by the larger one, anyone who wishes to study the German war economy should use both. However, by far the greater part of the information of interest to economists is contained in the report on *The Effects of Strategic Bombing on the German War Economy*, and this report will be the subject of the rest of this review.

This report makes available for economists the basic data on the German war production program. It would be hard to imagine anything more important for present and future economic thought than this. We had already adequate data on our own war production. But any two cases are far better than any one, since any two facilitate the identification of the essential as against the merely incidental features. The German case is probably the one most valuable for economists after the American, for it was the next largest.

It is a commentary on the age that production was, until the war, a branch of economics more cultivated by engineers than by economists. This was of course because of the "normal" prevalence of the condition opposite to that of wartime, that the financial conditions of the economy could not be taken for granted. Economists have been concerned with how to establish the preconditions for a high level of production. It was to this problem that J. M. Keynes devoted his thought, and his vigor in attempting to find a solution is the main reason for the high place he held in modern economics and for the appreciation of his work printed elsewhere in this issue of the *American Economic Review*.

The first reason for valuing the data on war production in Germany, or in any other country, is that it is to a high degree in contradiction of the expressed opinions of economists before the fact. This is not said in order to disparage economists. The point is the familiar one that new data which contradicts old theories has always been the source stimulus to further advances in thought.

It is worth while to recall what was thought of the German war economy from time to time in the recent past. Roughly, it is fair to say, the German arms economy was taken as largely a fraud until the fall of France. After the fall of France the signs were reversed, and those who had held that a totalitarian economy could not be efficient rang the alarms because it was efficient. This period in which the Nazi economy was overrated lasted until about the time of Pearl Harbor, for the simple reason that Pearl Harbor coincided in time with the discovery that Russia would not go down in a single campaign and that Germany was in for a long war on two fronts. Thereafter, economists who thought that the Nazi system had been at the

maximum stretch of effort since 1939 thought also that the ceiling must have been reached no later than 1941, so that there must be a decline in 1942 and 1943 because of materials exhaustion and bombing.

Actually, as the report makes clear, the German arms economy was at only a moderate level of effort until the time of Pearl Harbor, so much so, that the general level of munitions production was trebled thereafter. So far was it from the exhaustion of material resources that oil was the only material which became really short before the final stages of collapse. So far was Germany from the complete mobilization of manpower that even to the end of the war she made less effective use of manpower than did Britain. The anti-Nazi world had accepted Goering's old bombast about "cannon instead of butter." It had been pointed out that Germany had the advantage in war preparation of having caught the economy at the depression level, with all of the rise due to reëmployment going into arms. We now find that the German economy was in a very different position. As the report states, "... Germany entered the war with a 'guns *and* butter' philosophy which was continued well after the initial defeats in Russia." This was illustrated by the case of textiles, "By 1939, the textile economy of Germany was well prepared for war. The industry had fully recovered from the depression of the early 1930's and the wardrobe of the German people was probably at an all-time peak."

The sharpness of this contrast between our idea of the German economy on the one hand, and the German economy as now revealed, was not true for public or popular economic thought alone. It continued to affect Allied intelligence throughout the war, and the report finds frequent occasion to comment adversely upon this fact. On the second page of the report there is mention of the fact that Air Marshall Harris had a low regard for economic intelligence, and that this influenced him in deciding in favor of area bombing as against "precision" bombing. At another point it is pointed out that a certain study was far from accurate in assessing the number of machine tools in Germany. In this particular case, Allied intelligence was better than the record implies, for the report in question was criticized by a number of agencies informally, although no other formal study was prepared in order to present the contrary data. But the report is correct in the numerous other cases mentioned and many more could be given.

The fundamental reason for all of the bad guesses, both public and official, was that war production in the leading belligerents was operating on a scale outside of any familiar calculation. This was the cause of efforts made in both the United States and Germany to devise new statistical measurements by which to keep track of what was happening. In the United States this felt need led to the use of a "war production" index, and to efforts to adapt the peacetime concept of gross national product to wartime application. In Germany, thanks to a single enthusiast named Rolf Wagenfuehr, an index series was set up for "munitions production," covering aircraft, ammunition, explosives, weapons, panzer and motor vehicles and naval construction. The report criticizes this index as a rather rudimentary one, and also for the base period chosen. The criticism seems scarcely well taken, for

the group of products in question throws a sharper light on the intensification of effort than any broader list could do, and the base period is set at the true time of transition from a semi-war economy to a full one.

The contrast between the Spartan impression and the rather flabby reality of the Nazi economy before Stalingrad is readily explained. In the first place, there is the clear evidence that the Nazis did not in fact expect to fight a big all-year war. Secondly, in consequence of this the resistance to serious sacrifice was always superior, politically, to the claims of the war managers. "Suggestions that a plant be closed met the opposition not only of the management but also very often of a politically potent gauleiter, who assumed responsibility for the immediate interests of his area." Thirdly, the control system was never developed until 1942 and later simply because it was not seriously needed. "It must be emphasized that throughout this period the German economy met the limited demands placed upon it, not only without evidence of strain, but also without controls. The Wehrmacht supply offices were, until well into 1942, Germany's only war mobilization agency and exercised power only over munitions-producing enterprises." Fourthly, there is positive evidence that the German military leaders were singularly inclined to abnegation in the matter of demands for weapons and ammunition. "The impression they leave is that . . . they were perfectly satisfied with what they had, no matter how little it was. . . ."

The immediate implication is that the potential scale of the war was so far out of previous cognizance that it could move up not in one step, as we felt that it did, but actually in two. The Nazis, even in their casual way, raised the level so high that the world was astonished in 1940, yet Russia and the United States again moved it so much higher that the Nazis in turn were astonished.

The nearest thing to an explanation offered for the increase in German munitions production after 1942 is to be found in the figures offered for employment in industrial work for the armed forces, which increased from 5.6 millions in May 1942 to 6.6 millions in May 1943 and to a lesser extent continued to increase into 1944. This is obviously insufficient by itself to account for the increase. It is the more surprising therefore that the report disposes of the German program for labor efficiency in war industry in a single paragraph on page 37, which states only that, "Finally, there were numerous attempts to increase the utilization of labor power by increasing labor efficiency. During 1942 it is reported that the government proceeded to comb out inefficiently used manpower, applying output per man-hour as a test. Unfortunately statistics on this subject are not available." Actually this is an instance where American intelligence as far back as the end of 1943 was superior to the report, for there were reports prepared at that time which demonstrated how elaborate and intensive were the German measures, both on the side of increasing the skills of labor and in reducing the skills required for specific industrial operations.

In addition to the picture of the German economy, there is of course also a picture of the effects of bombing. The impression given to at least one reader is a depressing one. The bombing of oil in 1944 had a very definite

and drastic effect on the capacity of Germany to fight. The enormous attacks on transportation in the winter of 1944–45 caused a general breakdown in the shipment of coal and in all war industry. Otherwise the main accomplishment of the whole strategic bomber offensive was the bringing of the Luftwaffe to battle and its defeat. The bombing killed several hundred thousand people and injured hundreds of thousands more (the report offers only a rounded estimate for the numbers), and destroyed the cities of Germany, with only a small effect on the power of Germany to fight. The report further confirms what was already known to the well-informed, that so-called "precision" bombing was actually much like what the layman thought of as area bombing. But since there will never be another war fought with the equipment of 1940–45, it is perhaps of little value, even for military purposes, to examine the questions concerning the use of resources which arise from the apparent wastefulness of air war, for both sides.

There would be little point in venturing into broader criticism of the report. It would be nice to know many things which cannot be known. We will eventually know more than we do now, because the data now available will permit some calculations not yet made. The prime value of the accurate data on any one of the great war economies is in setting the scale accurately so that we can correct our innumerable hard-dying misimpressions.

There are a few minor points, however, on which the report might have been improved. As might be expected of a report prepared by a considerable group, it is of uneven quality. The section on the Light Metals, Nonferrous Metals and Ferro-alloys shows a vagueness which implies a lack of familiarity with the problems involved. The section on Iron and Steel is badly written. There are two charts on page 180, each having a line for munitions production, but with slight differences in the two lines which should be identical. The chart of Total Available Product on page 22 is difficult to interpret because neither the area nor the statistical basis is defined clearly. On page 95 it is stated that stocks of coal "in the Ruhr had fallen to 3,000 tons at the end of September." The figure is too low to be significant if accurate, and is probably inaccurate. On page 100 it is stated that "a substantial part of the Swedish (iron) ore is non-phosphoric." Only a small part is strictly non-phosphoric, although a large part is of low phosphorous content. Table 62 on page 109 indicates that Germany had no domestic production of manganese in 1938, which obviously ignores her large domestic production of Spiegeleisen. Table 63 on page 110 indicates a consumption of molybdenum far beyond any level actually attained. Table 64 on page 111 is nearly valueless, and does not wholly conform to Table 63 or to Appendix Table 83.

All of these faults however are as fly-specks on a body of facts. An understanding of production is indispensable to the solution of all our problems, and this can be attained only as war production comes to be understood in all of its conditions. The report marks a stage in the dispersal of the fog of war.

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Industrial Organization; Price and Production Policies; Business Methods

Profitable Labor Relations and How to Develop Them. By PAUL MOONEY. (New York: Harper. 1946. Pp. xi, 209. $2.50.)

Mr. Mooney, who was formerly General Manager of Public Relations and Personnel for the Kroger Grocery and Baking Company, is presently engaged in independent management counseling work. In this book he sets forth his ideas concerning how management may formulate and administer a program for getting more in return for its wage dollar.

Mr. Mooney's main thesis is that management must replace its negative and defensive approach to labor problems with a positive program of leadership if it is to raise the efficiency of its labor force to a satisfactory level. This may best be accomplished, according to Mr. Mooney, by means of effective training throughout the organization.

One of the points most effectively driven home is the importance of developing among the employees a feeling of participation in the business, and consequently a true sense of the importance of their activities to the welfare of the company. Not only will this tend to keep their interest at a high pitch, thus increasing the information which they will absorb during the training program, but their own ideas, which they will then tend to offer more freely, can also be of great value to the company. Mr. Mooney has great respect for the fairness and intelligence of the average employee, regardless of his or her position in industry. When employees are given a chance to participate in solving the problems which concern them, a bridge may be thrown across the gap which has tended to separate management from the average worker as business has become larger and management, as a result, more specialized. These ideas are not new, of course, but they are set forth in a refreshing manner. There can be little doubt of the importance of repeated education in such matters if a greater volume of goods and services *per capita* is to be produced in the modern industrial democracy, as well as if, for less tangible reasons, the world is to become a better place in which to live.

A number of check-lists are presented in various parts of the book to help management develop the abilities of employees and secure their fuller contribution to the success of the business. These check-lists, and the discussions concerning them, contain much food for thought. For example, six factors are said to determine how ably an employee does his job, as follows: "(1) The character and ability he brings to it; (2) The nature of the work; (3) The way he is introduced to his job; (4) The reward he gets for his performance; (5) The opportunity he is given; (6) The leadership he receives." (p. 9). Although the importance of each of these factors is obvious, how often do we find a company which gives them adequate attention?

The numerous valuable ideas in this book could, in a number of instances, have been presented more effectively. For example, a great deal is made of the fact that a program of training checkers in a grocery store led to a large increase in their production and to a large reduction in the errors they made.

To what extent, however, were these beneficial effects permanent? Mr. Mooney's statements that these improvements had continued would be fully convincing only if they had been substantiated by a more thorough analysis of follow-up procedures used and of the results obtained over a period of time. Since it has frequently been observed that one of the hardest tasks in industrial relations is to make good results outlast the novelty of the experiments which may have led up to them, the durability of Mr. Mooney's results as he states them could legitimately be questioned by the skeptic.

The book contains a number of rather loose generalizations. For example, industrial engineers would be rather startled to read: "Thus far no one has devised an accurate method of measuring what a worker produces in comparison with what he could produce if he gave his best efforts to the work. Consequently, in the absence of any method of measuring actual output in comparison with potential output, the performance the employer gets is just what the employee chooses to give" (pp. 190–191). In some lines of work, of course, measurement of actual *versus* potential performance is difficult if not impossible, but quite accurate means of measuring the level of performance have been developed for many routine jobs in industry.

To sum up, while the ideas in Mr. Mooney's book are not new, in general they would seem to be fundamentally sound, and few would doubt the need for more education in their validity. Although the book is stronger in insight than it is in analysis, its shortcomings may well be overlooked for the benefit of being exposed to the industrial relations wisdom to be found beneath a somewhat rough exterior.

RICHARD H. WOOD

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Economic Geography; Regional Planning; Urban Land; Housing

La Localisation des Diverses Productions: Règles Rationnelles Déduites de l'Expérience. Bibliothèque Générale des Sciences Economiques, No. 18. By LAURENT DECHESNE. (Brussels: Les Editions Comptables, Commerciales, et Financières. 1945. Pp. 239).

In this book Professor Dechesne has given us results of a lifetime of research in economic and historical geography. His aim is to set up a theoretical framework adequate to explain the locations of all branches of economic activity at all stages of historical development, with a minimum of abstract deduction and a maximum reliance upon observed facts.

The book fulfills this promise. Though often superficial or erroneous on particular points, it is valuable as a synthesis. For breadth of treatment it is probably unequalled in this field. The approaches of the geographer, the economist, the sociologist and the historian are skilfully integrated. Economists will learn from this book a great deal about the relations of these other disciplines to their own, at the same time finding the author usually enough of an economist to retain their respect. It is recommended reading on this basis to any economist, though it will naturally appeal most to those in-

terested in regional development, population distribution, and interregional trade. Its application to all stages of economic development, and the wealth of historical illustrations, will commend it to students of economic history. The examples are drawn from all parts of the world, though Belgium and France naturally figure most often.

In an opening chapter the author lays bare the limited applicability of certain earlier approaches to location theory, including Thünen, Alfred Weber, Sombart, and the geographers. He correctly notes that the geographers have generally overestimated the role of natural resources and underestimated the role of human techniques and relations, on account of their inadequate knowledge of social sciences; while the economists have mainly restricted their interest to international trade or to elaborating highly abstract and incomplete theoretical structures like those of Thünen and Weber.

Unfortunately, Dechesne overreaches himself here. In his anxiety to establish the unique character of his own work, he is unfair to several of his predecessors, and betrays an inadequate knowledge of their contributions. One of his counts against Thünen, for example, is that the existence of navigable waterways is ignored. Actually the Isolated State was equipped, in one of its versions, with such a stream. Much more serious is Dechesne's complete ignoring of Ohlin and E. A. G. Robinson, and his dismissal of Palander and Lösch in a couple of sentences, which strongly suggest he has never really read those authors. It is fair to say he is fifteen years behind the times in the literature of locational economics. I do not feel competent to appraise his appraisal of the sociologists, historians and geographers, but note his failure to mention, for instance, McKenzie's work, or Whittlesey's *The Earth and the State*. Nor is there any reference to a number of statistical and policy studies from the United States and Great Britain which were available before the War. This inadequate digesting of other literature, to be sure, makes Dechesne's actual achievement the more remarkable.

The author lays stress on the basic distinction between production advantages (primarily labor and energy costs) and transfer costs, with the latter category subdivided into costs of assembling materials and costs of distributing the product. An unusual and praiseworthy feature is his emphasis on elements of transfer cost other than transportation, which assume great importance in the case of luxury goods, "shopping goods," or other differentiated products and, on account of the small scale of transactions and the personalized character of trade, at the final stage of distribution to the consumer.

His treatment of the extractive industries, which are tied directly to the natural resources they exploit, is conventional. He recognizes that access to market (and in certain cases, access to sources of transported materials such as fertilizer or mine supplies) determines the extent to which various resources will in fact be exploited; but concludes that "Nature" (the distribution of resources) is still the dominant locational factor for this type of activity.

Industries representing early stages of production are likely to be oriented

to the extractive industries as sources of materials, on account of the usually considerable degree of weight- or bulk-reduction involved. As goods advance through subsequent stages of production toward final consumption, they become more valuable per unit of weight, hence more "transportable"; so considerations of transport cost have less weight and the patterns of such industries are increasingly responsive to differentials in costs of production.

This last principle is repeatedly emphasized. It is supported, however, only by the reasoning just cited and by a number of selected examples. Surely this is a point on which more penetrating analysis and some comprehensive statistical inquiry would be desirable. It does seem reasonable that the big reductions in bulk, weight or perishability of goods tend to be made at the earliest practicable stage of production, while subsequent reflations —*e.g.*, the adding of water to beverage extracts—tend to be delayed to the latest practicable stage. This means that early stages are more likely to be material-oriented and late stages market-oriented. But the increase in "transportability" is a slippery notion. It seems to reflect the relation between value per ton (say) and the cost of shipping a ton over a unit distance. Where the manufacturing process makes the material a good deal more bulky (as furniture factories and bottling plants do), the ton-mile costs of shipment on the product may increase more than the unit value. In any event, the most appropriate indicator of the sensitiveness of an industry to production-cost differentials would appear to be the value added by that stage of production, not the total value of the materials at that stage. I see no reason why value added must be greater in later than in earlier stages of production.

Dechesne often seems to slight the factors making for market orientation. He concedes only that such orientation may arise when commercial contact considerations (the non-transport elements of distribution costs) are predominant, or in a few "exceptional" cases where products are very difficult to move. Surprisingly, however, he illustrates this latter category by referring to ships and locomotives. Surely self-propelled vehicles are the easiest possible type of product to deliver! (Elsewhere the author himself refers to the relative ease of raising livestock at a distance from markets, on account of their ability to carry themselves to market.)

The discussion of transfer costs could have been improved, without undue loss of generality, had the author inquired into the internal economics of transport and communication as such. He does recognize the economy of water routes as against land routes, and railroads as against earlier methods of overland transport. Once or twice he mentions the factor of cheap return hauls. But such important and inescapable factors as the existence of terminal costs, the economies of dense traffic, and discrimination against "more transportable" goods (meaning here, let us say, those with lower elasticities of demand for transportation), are ignored in the analysis. The first two are important concentrating factors, while the third offsets, to an undetermined extent, the locational effects which Dechesne attributes to the increase of unit value of goods as they pass through successive stages of production.

The treatment of the gradual separation of early-stage processing of

agricultural products from the farm, under the influence of improved transport and large-scale production techniques, is illuminating. It is pointed out that those operations which remained most tenaciously attached to the farm are the ones with low skill requirements or a high degree of weight loss, and those yielding bulky by-products useful on the farm.

Dechesne's category of "transforming industries proper" excludes the first processing of agricultural materials and also the "heavy industries" which work with crude mineral products. More responsive to production-cost differentials, the transforming industries are located more and more with respect to labor supply and energy costs, as the cheapening of transport diminishes the importance of materials and market factors. In medieval times, an adequate free labor supply was found only in the towns; but the restrictive practices of the gilds raised labor costs and prevented manufacturers from introducing improved methods, bringing a general exodus to the countryside. The development of water-power machinery brought these rural industries from scattered households to waterpower sites, and the later development of steam power further concentrated them where fuel was cheap, in the new industrial cities of the Industrial Revolution. (Dechesne properly indicates that the contemporary "Transport Revolution" was really what made concentrated mass production, urbanization, and the world economy of the nineteenth century possible.)

In a chapter dealing with "production advantages peculiar to the industry," the author introduces the concept of "derived" factors of location—that is, advantages or disadvantages created in a community by the presence of the industry itself. An established location, by virtue of the "derived factors" of trained labor, commercial and financial facilities, and fixed plant, possesses a strong inertia, which keeps such locations in business long after the originating factor is obsolete. On the other hand, the author sees a general tendency for the labor supply in concentrated production centers to go in for restrictive practices which (as in the case of the medieval gilds) provoke a flight of industry.

A conclusion of general interest is that industry as a whole is now ruralizing again, and that cities will decline in importance. Though the effect of cheaper and better transport is to make possible an increased concentration of *any one* industry, the agglomerative factors accounting for cities can be resolved mainly into costs of transfer and contact, labor efficiency, and energy costs. Improved means of transport and communication loosen the first of these ties; the loss of initiative and productivity of urban labor, and its reliance on restrictive cost-raising tactics, plus opportunities for introducing labor-saving machinery in rural locations, remove the second factor of urbanization; and the use of transmitted electric power equalizes energy costs through the countryside. Therefore, concludes the author, we are progressing to a new ruralization of industry, especially evident in the United States.

The only fact-finding investigation cited in support of this radical conclusion is that of Daniel B. Creamer.[1] A more careful reading of Creamer and

[1] *Is Industry Decentralizing?* Study of Population Redistribution, Bulletin No. 3. (Philadelphia: Univ. of Pennsylvania Press. 1935.)

of subsequent studies would have made it clear, however, as Dechesne does not, that the "decentralization" trend in American manufacturing industry is mainly a spreading-out of major industrial communities, best described as "suburbanization." For population as a whole, there is still less evidence of any ruralization trend beyond that involved in the internal rearrangement of metropolitan areas.

In a chapter on the locations of industries of different intensities, Dechesne expounds soundly the general principle of combination of productive factors in variable proportions according to their relative prices, and shows that the adjustment of the labor-capital ratio in industry is basically akin to the adjustment of land-use intensity in agriculture. Little is added, however, to previous developments of this subject. It is demonstrated by example that intensity of land use varies with density of population. With high intensity and density we find an increased proportion of farm tenancy, and as a result less energetic and less efficient use of the land. On the other hand, very low densities and intensities are the basis of latifundiary exploitation, which is likewise inefficient and retards progress toward more intensive uses.

The whole discussion of intensity of land use deals with agriculture. A surprising lacuna in this book is the omission of any discussion or even mention of the structure of cities.

The adverse effects of locational shifts upon the economy of some regions is briefly handled, primarily with reference to the effects of improved transport in extending the sphere of geographical specialization (in Dechesne's terminology, widening the "domain" of location). The "structural crisis of the nineteenth century" is ascribed to the competition of New-World agriculture with that of Europe as a result of improved transport. Europe adapted herself by further specialization in industry (and by protection), but a new structural crisis now manifests the desire for industrial self-sufficiency in the erstwhile "new countries." We have now entered a period of nationalistic trade restriction, particularly serious for small countries like Belgium.

Belgium abandoned her early quality industries during the Industrial Revolution because she was so well situated to participate in the world exchange of standardized commodities. To weather the period of international trade restriction, she must learn from Sweden and Switzerland, which kept and developed their high-quality specialty export industry primarily because they were at a relative disadvantage in the production and marketing of the cheap staples. The author is optimistic here, seeing Belgium well on the way to the necessary improvement of production and merchandising techniques.

The author's views on public policy have already been more ably expounded by Adam Smith. Dechesne refuses to admit governmental action of any kind into his theory, on the ground that it is inherently irrational and unsystematic, therefore incapable of being theorized about. A brief chapter, however, recites the failure of various protective schemes and state enterprises. All the protectionism of the nineteenth century, so far as he has been

able to discover, failed to start a single new industry in any country.[2] He concludes that *any* kind of government action is generally harmful in its locational effects and that only if it happens to ride the wave of fundamental "economic conditions" may it be innocuous or slightly helpful.

In an encyclopedic work of this kind, one should not expect perfect accuracy. But this book is so strikingly slipshod in matters of detail that the reader must watch his step. A spot check of the bibliography and notes revealed errors in about one reference in eight. A. P. Usher, for instance, is invariably referred to as either "Payton-Usher" or simply "Payton." The illustrative cases from American and also British literature are also so often incredible that one can only hope Dechesne is more trustworthy on his home ground. Thus we learn that the American steel industry is rapidly migrating to the shores of Lake Superior; that there are seven New England states; that cheap electric power is reviving rural household industry in the United States; that Welsh coal can reach London only by rail; and that the manufacture of farm implements in the United States was concentrated in the cereal belt, at Ipswich. In some other places, this reviewer was able to reconcile a sentence with its context only by supplying an omitted negative.

Despite its shortcomings, the book should be widely read, as a valuable contribution to the broader understanding of economic geography.

EDGAR M. HOOVER

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Labor and Industrial Relations

Labor Policy of the Federal Government. By HAROLD W. METZ. (Washington The Brookings Inst. 1945. Pp. ix, 284. $2.50.)

This valuable study refutes the common assertion that the federal government has no labor policy, or at best a vague and vacillating one. Mr. Metz points out that federal labor legislation has consistently aimed at improving the economic and social lot of the working classes. Thus the purpose of the Department of Labor was declared to be "to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions and to advance their opportunities for profitable employment." The scope of federal labor legislation, prior to the Roosevelt administration, had been rather limited, partially due to judicial interpretations of federal powers. With the advent of the Roosevelt administration, aside from the existing Norris-La Guardia Act which was a foreboding of the nature of future laws, there came a mass of labor legislation, frankly designed to aid and assist labor while at the same curbing and eliminating many of the "rights" of management. Paralleling this legislation there developed a markedly sympathetic attitude on the part of the Supreme Court for labor's "rights."

The author portrays three stages of the public attitude toward collective

[2] At another point he states, without explanation, that this protectionism extended the "domain of location" (*i.e.*, aided geographic specialization)!

bargaining, namely, suppression, toleration and encouragement. This is shown by the evolution of the workers' rights to organize, and protection by federal criminal penalties and administrative remedies against employers who violate these rights. The official encouragement of union organization is traced through the Railway Labor Act, the Norris-La Guardia Act, the National Industrial Recovery Act, the National Labor Relations Act, and the policies of the War Labor Board. Attention is directed, by legal citations, to restriction of the employer's right of free speech lest it be construed as coercion of employees, and to the various interpretations of the unfair labor practices prohibited by the National Labor Relations Act. Attention is also given to the unfolding of unlimited rights to strike, regardless of the purpose of a strike, to the virtually unlimited right to picketing under federal law, to the acceptance of most all kinds of labor boycotts, and to the shrinking legal responsibility and liability of unions and their members.

The employer's obligation to bargain collectively under federal legislation, and the power of administrative agencies to influence the terms of the collective agreement are carefully treated. Under the Railway Labor Act collective bargaining need not result in agreement, thereby offering no opportunity for governmental dictation of terms. But the War Labor Board assumed the power to prescribe the terms to be included, and the National Labor Relations Board may indirectly influence the terms by declaring an employer's failure to grant "desirable" demands of the workers or his insistence on "undesirable" terms as a refusal to bargain collectively.

An extremely meaty chapter is that on union organization, in which the author delineates the influence of the federal government upon the organization of the American labor movement. Mr. Metz states that the federal government has "favored the development of large bargaining units, and it has encouraged unions that are affiliated with the A. F. of L. and the CIO while discouraging independent organizations." As to the two objectives of the National Labor Relations Act—protection of the worker's right of self-organization and the increase of labor's bargaining power, the author shows that the Board generally gives chief consideration to the latter.

The present policy of the federal government is described as promoting the closed shop and other forms of union preference, except in railroad transportation where the law, through the influence of the railway unions, has prohibited the closed shop. The closed shop and other forms of union preference are pointed to as facilitating inter-union warfare. Federal policy does not extend to the protection of the individual worker through control over the admission or expulsion of members from the union organization, nor through assurance to the nonunion worker that collective bargaining by the union will even consider his interests.

The government from 1933 to the present has found itself playing a dual rôle with respect to wages, mostly to increase wages, but at other times to prevent them from going too high. Direct and indirect devices have been used to carry out these policies. The direct method has found favor in the form of minimum wage laws, and in the war period through making wage changes subject to government approval. In the various federal attempts

to regulate wages directly, Metz indicates that the government has failed to develop and apply objective standards of determination. He feels that, although this may have proven advantageous to labor so far, the same wage machinery in the hands of unsympathetic administrators could be operated to labor's disadvantage. The federal criteria for regulating the hours of labor are varied—to reduce unemployment, to increase wages, to increase purchasing power, and to promote safety, while regulation of child labor was justified as a means of preventing their exploitation and eliminating a wage depressant.

The author discusses at some length the settlement of labor disputes and the adjustment of wartime labor disputes. In his concluding chapter he summarizes the major trends of the federal government's labor policy.

This work presents a concise, clear-cut analysis of the entire federal labor policy. It is well documented throughout, and is strikingly clear of bias. In the reviewer's opinion it is a book which the student of labor legislation or labor problems has sorely needed.

EARL E. MUNTZ

New York University

Industrial Relations and the Social Order. By WILBERT E. MOORE. (New York: Macmillan. 1946. Pp. xii, 555. $4.00.)

Professor Moore set a high goal for this book. He has undertaken, in a textbook, to consider as a single whole the material usually treated separately as corporation management, personnel administration, labor relations, as well as theories of capitalism, social psychology and other things. He has sought, as he points out in his preface, to describe and explain "the functioning of the structure as a whole." Such a venture deserves success. But success requires more knowledge, more sense of selection and emphasis, more penetrating understanding than most men have.

Such an undertaking could be considered successful on two grounds: either that it provided a clear effective summary of massive and widely scattered material, or that it provided new (or even useful) insights. Professor Moore's book does neither. For most readers, more concrete and specific summaries are provided elsewhere, if not in one volume, at worst in three or four.

The job is made even more difficult for this book by the transposition into sociological terms, when so much of the basic material is written by lawyers and economists. Although the author sought to direct new light on the problems of society and industry by using the devices of sociology, most of the source material on which he depends does not fall easily into the sociological categories. The result is confusing, rather than enlightening. Too often the writing becomes unremittingly abstract and general, and the sociological approach seems at times to be little more than embroidery of the obvious.

The range of subject matter in the book is so broad and varied that only the most powerful adhesive thinking could bring a real sense of integration.

The insights which might illuminate the relations between the various fields covered by the book are not there.

The scope of the book is indicated by the titles of its main parts: Development of Modern Industry; Industrial Organization: Management; Industrial Organization: Labor; Industrial Relations; Industry and Society.

The first Part is an effort, in less than forty pages, to block out in broad strokes the origins of modern industry, its relation to inventions and technology, and its dependence on the theory of "individualism." The discussion of Industrial Organization: Management is a review of the character and organization of modern industrial management; how organizations are charted, the division of functions, and the disparities between formal and human relations.

The Part on Industrial Organization: Labor is something of a rag bag of subjects. The sources of labor supply and a list of wastes of labor resources are reviewed at some length. These chapters, however, do not discuss our extraordinary experience with the wartime labor market which seriously stretched some of the old ideas of the way the labor force is limited by the numbers and skills of workers. Since Professor Moore later says he thinks that we need economic planning for full employment, it would have been desirable to consider the only substantial experience this country has had with the way the labor market acts when there are more jobs than workers. Probably even more appropriate would be an extended discussion of the techniques of occupational analysis and placement. The war experience showed that the way each employer hired and used his labor was more important in setting the limits of manpower for production than any theoretical limit in the total labor supply. In the past few years there have been developed techniques in this field which ought to be more widely known and used.

The rest of this Part sketches the results of some of the studies on the effect of fatigue and routine on machine workers. There is described, perhaps with more conviction than the state of knowledge justifies, the motives workers have for working. He says, "that the goals appearing to be dominant in the worker's orientation to his job are *security, pleasant working conditions, and status in a competitive society.*"

In the Part on Industrial Relations, summary treatment of labor organization, collective bargaining, and industrial conflict is undertaken. The significance of such treatment, of course, depends upon the points which are emphasized. The discussion of collective bargaining, for example, deals at length with the operation of the National Labor Relations Act and the interpretations that have been put upon its provisions, but not at all with the economic and political significance of the wage bargain. One does not need to have gone through the explosive struggles over wages in the past six months to decide that the bargaining on, for example, the common labor rate in the steel industry entrains in its wake industry-wide and nation-wide economic and political consequences. In a similar fashion, the treatment of industrial conflict will not satisfy those who want help in thinking about consequences of recent industrial struggles.

Although it must have been intended to weave throughout the entire treatment of the book a consideration of the social impacts of industry, most of the discussion of this aspect is tied to the end of the book in a final Part largely unrelated to the early discussion. The prospects and problems of economic planning are touched upon in a final chapter with the conclusion, certainly not to be drawn from the context, that some form of economic planning by the government must be undertaken.

Professor Moore has provided extensive and useful bibliographies with each chapter. They reveal how great and variegated is the knowledge which the social and economic philosopher must bring to the study of industrial relations and the social order. Any student who undertook to read through the listed books would have a rich background in a number of subjects.

The project which Professor Moore undertook was a very worthy one. Though the book has not met the demands of its grand scheme, certainly one reason is that the undertaking was so ambitious. If the book stimulates others to think and write about the ways in which management practice and industrial relations interlace and, in turn, affect community and social relations of people, it will have been more than justified. Too much industrial administration and too much collective bargaining today is undertaken without regard for the social consequences.

RALPH D. HETZEL, JR.

Washington, D.C.

Collective Bargaining. By LEONARD J. SMITH. (New York: Prentice Hall. 1946. Pp. xiii, 486.)

This book is not concerned with the social, political, or economic significance of collective bargaining. Its purpose is to present certain fundamentals that will be helpful in negotiating and administering collective bargaining contracts. To this end the material is organized in three sections. The first deals with the nature of collective bargaining from the standpoint of the conceivable bargaining units involved, the likely attitudes of the parties toward collective bargaining, and the possible objectives they may be seeking through drawing up a labor agreement. This is then followed by a section that considers the problems of actual negotiations in terms of the procedures that may be followed and the tactics that may be employed by the negotiators. This section contains some helpful suggestions in regard to ways by which the conduct of negotiations may be smoothed.

The last section constitutes the major part of the book. It attempts to take the labor agreement and to consider all of its possible major individual provisions. These the author believes can be grouped around eight major headings: union recognition, wages, working time, conditions of employment, management rights, seniority, day-to-day relations, and, lastly, certain formal provisions in regard to the purpose and duration of the contract. After commenting on each major topic, the author proceeds to consider the various provisions that it is likely to take in the collective bargaining contract. An especially noteworthy feature is the construction in connection with each provision of the labor agreement of a check list which

quickly brings to light all the important items that may require specification in connection with the provision if confusion is to be avoided.

The remainder of the book consists of a glossary of labor terms, a description of the important private, public, and labor research organizations which furnish information that may be of use to negotiators, and a select forty-three page bibliography of books and articles on collective bargaining with discriminating comment in regard to each item. The book concludes with a series of appendices on Industrial Jurisprudence, Illustrative Labor Agreements, and Specimen Labor Agreement Clauses. The 117 pages of illustrative labor agreement material would be more useful if an index or even a mere table of contents were furnished.

A. MORGNER

University of Colorado

Labor in the Philippine Economy. By KENNETH K. KURIHARA. Issued under the auspices of American Council, Institute of Pacific Relations. (Stanford University: Stanford Univ. Press. Pp. xv, 97. $2.00.)

This brief book is a semi-popular treatment of the position of labor in the Philippine Islands in the pre-war years. Philippine labor problems are conditioned by the fundamentally agrarian and colonial nature of the Islands. Much of agricultural production is carried on under a share-cropping system, while ownership of land is highly concentrated. Industrial production "has not yet outgrown the handicraft stage" (p. 9). "Economic dependence on the United States . . . largely accounted for the immature growth of native industry" (p. 10).

In his account of the history of labor organization, the author says, "Trade-unionism had not yet reached the broad masses in the Philippines in 1941" (p. 69). At the end of 1940 only about five per cent of the gainfully employed workers, industrial and agricultural, were organized and less than two per cent in registered labor unions. Labor organization is also hampered by factionalism. The author is sympathetic toward further organization of labor as a means of raising the standards of Philippine labor. He is also sympathetic toward the "Social Justice" program, in many ways the Island counterpart of the New Deal.

This reviewer would have liked to have seen a more thorough examination of the implications involved in the imposition of a "social welfare" program upon an economy in the early stages of capitalist industrialization.

FRANCIS S. DOODY

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Population; Migration; Vital Statistics

Economic Demography of Eastern and Southern Europe. By WILBERT E. MOORE (Geneva: League of Nations. 1945. Pp. 299. $3.00.)

This book is the second of a series to be prepared for the League of Nations by the Office of Population Research of Princeton University. The

first was the important work published last year under the title, *The Future of the Population of Europe and the Soviet Union.* These publications represent the beginning of an extended program of research undertaken by this organization for the League.

Essentially, this study deals with the problem of rapidly growing population in agricultural countries with few or meagre resources. In contrast to the relatively prosperous and industrial countries of northern and western Europe, in which population is increasing but little or is actually declining, this volume shows the poor relation of men and resources and the large potential growth in agrarian countries of eastern and southern Europe. The countries studied fall into two main groups: (1) eastern and southwestern Europe exclusive of the Soviet Union (Estonia, Latvia, Lithuania, Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia, Bulgaria, Albania, and Greece); and (2) the southwestern Peninsulas (Italy, Portugal, and Spain). Not counting the Soviet Union, approximately one-half of the people of Europe live in these areas. Projected population figures for these countries for 1940–70 show very substantial increases in numbers. Also in contrast to the more highly developed and industrialized nations of northwestern and central Europe, these countries are largely dependent upon agriculture. This fact is extremely important in any population study. Although these general facts have been well known, Moore has made a significant contribution in attempting to deal with the entire and complicated problems which will prove to be so important not only to the welfare of these peoples but also to the peace of Europe.

Moore shows the low productivity *per capita* in agriculture in those areas where the need is the greatest. In order to do this it was necessary to work out a basis by which some comparison between the various countries could be made. The quantity of each commodity grown was "given a standard weight that reflects the typical or modal exchange ratio between that commodity and the crop basket" (p. 31). The value of production in crop units was then related to persons dependent on agriculture and to male workers engaged in agriculture to make some approximation of the relative income of the agricultural population. The effectiveness of the use of land was studied by production in crop units per hectare of agricultural land. The relative poverty of the southern and eastern areas is clearly brought out by these data. The author also attempts to show that most of these countries already have surplus population. This computation is based on the assumption that any number in excess of that necessary to produce the production of the average per capita for Europe is surplus. France is also used as a basis for comparison.

There follows an analysis of the institutional and technological factors which explain the low productivity. Systems of inheritance, strip cultivation, and very small and uneconomical holdings are discussed. Lack of capital is an extremely important factor in explaining this low production. Moore believes that, with the institutional and organizational conditions prevailing in these countries, there is little ground for believing that the condition of the eastern and southern peasant can be greatly changed through improvements in agriculture. The pace of change and the possible

growth of agricultural capital would be too slow. There is a widely accepted opinion among population students that emigration, while relieving pressure to some extent, affords no real or permanent solution for a country with an unfavorable relation of men and land. Moore does not believe that emigration is any solution to the problem of these agrarian countries.

According to this study, hope for an improvement in the poverty of these countries lies largely in industrialization. Industrialization would not only bring forth new and greater amounts of products but at the same time would lead to a needed decline in the birth rate. Although deficient in power and minerals, there are many industries which might be successfully introduced. As in the case of agriculture there is a dearth of capital, but Moore believes that this industrial capital could more easily be secured than in the case of agriculture. Government aid and planning would play an important part in this development. Already these countries support hidden unemployment in agriculture and these potential workers could be utilized in industrial work. Moore is of the opinion that modern industrial techniques of northwestern Europe could be introduced in a rather short period.

As indicated above, this study uses some of the new techniques to bring out the unfavorable relation of resources to numbers. Overpopulation is a relative matter and is a conception which is both difficult to define or to prove. In the matter of methodology there may be and usually are differences of opinion. The author is fully aware of the limitations of statistical data. This is a study very carefully done and without dogmatic statements.

As we look at Europe at the present time and consider its economic and political problems, there is a serious limitation to this study. The entire approach of this book, written in 1945, is based on the assumption of something like a pre-war Europe. It now seems certain that a number of these nations face political and institutional changes of the greatest importance. Some of them may disappear entirely or be so modified that they cannot be identified with those of pre-war Europe. Will many of them be combined into a sphere of influence dominated by the present great power to the East? Will Latvia, Rumania, or Bulgaria institute planning to secure industrialization on anything resembling pre-war economic units? Present signs point in other directions. Whatever happens to these countries, this book will represent an extremely important work about the demography of this important area of Europe.

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KUCZYNSKI, J. *Labour conditions in Great Britain, 1750 to the present.* 2nd ed. (New York: Internat. Publishers. 1946. Pp. 191. $2.50.)

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Annual wages and employment stabilization techniques. Research rept. no. 8. (New York: Am. Manag. Assoc. 1946. Pp. 96. $2.25.)

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The federal labor laws: a manual for supervisors. (Deep River, Conn.: Nat. Foremen's Inst. 1946. Pp. 72. $2.50.)

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Women workers in Brazil. Women's Bur., bull. 206. (Washington: Supt. Docs. 1946. Pp. 42. 10c.)

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Social security revision. (Chicago: Counc. of State Governments. 1946. Pp. 34. $1.)

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Consumer education and the social studies: a statement prepared for the Consumer Education Study of the Nat. Assoc. of Secondary-School Principals. (Washington: Nat. Educ. Assoc. 1945. Pp. 24. 15c.)

Relation of business education to consumer education: a statement prepared for the Consumer Education Study of the Nat. Educ. Assoc. (Washington: Nat. Educ. Assoc. 1945. Pp. 28.)

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CHANDRASEKHAR, S. *India's population—fact and policy.* Introd. by W. S. THOMPSON. (New York: Day. 1946. Pp. 117. $2.)

CHEN, T. *Population in modern China.* Am. Jour. Soc., Vol. LII, No. 1, Pt. 2. (Chicago: Univ. of Chicago Press. 1946. Pp. ix, 126.)

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THOMPSON, W. S. *Population and peace in the Pacific.* (Chicago: Univ. of Chicago Press. 1946. Pp. 397. $3.75.)

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MORGAN, A. E. *Nowhere was somewhere—how history makes Utopias and how Utopias make history.* (Chapel Hill: Univ. of North Carolina Press. 1946. Pp. 234. $2.50.)

NORTHROP, F. S. C. *The meeting of East and West—an inquiry concerning world understanding.* (New York: Macmillan. 1946. Pp. xxii, 531. $6.)

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Editor's Note—Through the kindness of Mr. Svend Laursen, of the Department of State, we have received the following list of books which he regards as the more important economic works published in Denmark since 1940.

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PEDERSEN, J. *Fuld Beskaeftligelse og økonomisk Tryghed.* Full employment and economic security. (Copenhagen: Nyt Nordisk Forlag. 1945. Pp. 128.)

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PHILIP, KJ. *Det offentliges Finanspolitik og den økonomiske Aktivitet.* Public finance and economic activity. (Copenhagen: Ejnar Munksgaards Forlag. 1942. Pp. 437.

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CHAPMAN, SIR S. *The profit motive and the economic incentive.* Econ. Jour., Mar., 1946. Pp. 6.

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KEIRSTEAD, B. S. and COORE, D. H. *Dynamic theory of rents.* Canadian Jour. Econ. and Pol. Sci., May, 1946. Pp. 4.

KLEIN, L. R. *Macroeconomics and the theory of rational behavior.* Econometrica, Apr., 1946. Pp. 16.

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Economic Systems; Post-War Planning

SMITH, H. R. *The role of science in the formulation of economic policy.* Southern Econ. Jour., Apr. 1946. Pp. 17.

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GRAAFF, J. DE V. *Fluctuations in income concentration.* So. African Jour. Econ., Mar., 1946. Pp 18.

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NAIDOO, V. S. *Survey of the income and expenditure of Indian employees of the Durban Corporation, living at the Magazine Barracks, Durban.* So. African Jour. Econ., Mar., 1946. Pp. 23.

Business Cycles and Fluctuations

BRAUNTHAL, A. *Wage policy and full employment.* Internat. Postwar Problems, Jan., 1946. Pp. 20.

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BUCHANAN, N. S. *American national income and foreign investment.* Internat. Postwar Problems, Jan., 1946. Pp. 10.

DAVIS, J. S. *Experience under intergovernmental commodity agreements, 1902–45.* Jour. Pol. Econ., June, 1946. Pp. 28.

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OXENFELDT, A. R. *Monopoly dissolution; a proposal outlined.* Am. Econ. Rev., June, 1946. Pp. 7.

Industrial Organization; Price and Production Policies; Business Methods

GIVEN, W. B., JR. *Freedom within management.* Harvard Bus. Rev., Summer, 1946. Pp. 11.

MORGAN, T. *A measure of monopoly in selling.* Quart. Jour. Econ., May, 1946. Pp. 3.

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MUNTZ, E. E. *The farmer and social security.* Soc. Forces, Mar., 1946. Pp. 8.

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ARCHINARD, A. *The Swiss system of compulsory extension of collective agreements.* Internat. Lab. Rev., Mar.–Apr., 1946. Pp. 15.

COHO, F. E. *Guaranteed annual wages.* N.A.C.A. Bull., July, 1946. Pp. 10.

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KEEZER, D. M. *The National War Labor Board.* Am. Econ. Rev., June, 1946. Pp. 25.

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Wage policy, and the role of fact-finding boards. Mo. Lab. Rev., Apr., 1946. Pp. 13.

Work stoppages caused by labor-management disputes in 1945. Mo. Lab. Rev., May, 1946. Pp. 18.

Workers' experiences during first phase of reconversion. Mo. Lab. Rev., May, 1946. Pp. 11.

Consumption; Coöperation

RABINOWITCH, G. *Cooperatives in the U.S.S.R.* Am. Rev. Soviet Union, May, 1946. Pp. 11.

SCHICKELE, R. *The national food allotment program.* Jour. Farm Econ., May, 1946. Pp. 19.

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BOWLEY, A. L. *Rural population in England and Wales, 1911 and 1931.* Economica, May, 1946. Pp. 22.

FRANKEL, H. *The industrial distribution of the population of Great Britain in July, 1939.* Jour. Royal Stat. Soc., Vol. CVIII, Pts. III–IV, 1945. Pp. 39.

Unclassified Items

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NOTES

Editor's Note

Miss Doris Merriam, formerly recorder and editor of Williams College, has been appointed assistant to the managing editor in place of Miss Mary Connally, whose resignation was announced in the June number.

Beginning with this number, the address of the editorial office will be Goldwin Smith Hall, Cornell University, Ithaca, N. Y.

Arrangements have been made to hold the annual meeting of the American Economic Association at Atlantic City, January 24–27, 1947. Professor J. Weldon Hoot, of the Wharton School of Finance and Commerce, University of Pennsylvania, has been appointed as local arrangements representative.

The following persons have recently become members of the AMERICAN ECONOMIC ASSOCIATION:

Adams, W. S., 1 Buena Vista Court, Urbana, Ill.
Althoen, P., 1664 Russett Ave., Dayton 10, Ohio.
Alvord, G. G., 6 Phelps St., Kittery, Me.
Arnold, S., Bur. of Bus. Res., Ohio State University, Columbus 10, Ohio.
Arthur, I. W., Economics Dept., Iowa State College, Ames, Iowa.
Atkinson, Mrs. L. J., 320 N. Piedmont St., Apt. 4, Arlington, Va.
Barloon, M. J., Grad. School of Bus. Admin., Harvard University, Soldiers Field, Boston 63, Mass.
Begley, J. P., Creighton University, Omaha, Neb.
Bernstein, J., 5635 University Ave., Chicago 37, Ill.
Bishop, R. L., Massachusetts Institute of Technology, 1-175, Cambridge, Mass.
Borchardt, H. G., 311 Colorado Bldg., Denver 2, Col.
Brewer, J. C., 954 Mulberry St., Galesburg, Ill.
Brill, D. H., 1702 Summit Pl., N.W., Washington, D.C.
Budenz, L. F., P.O. Box 8, Notre Dame, Ind.
Cascino, A., Bendix Home Appliances, Inc., 3300 W. Sample St., South Bend 24, Ind.
Chandler, H., 1211 Hinman Ave., Evanston, Ill.
Christen, Miss E. H., Box 98, R.D. 1, Watervliet, N.Y.
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Cole, H. W., 101-12 Ascan Ave., Forest Hills, N.Y.
Cook, F. H., 523 Fairway Drive, State College, Pa.
Coolsen, F. G., Rensselaer Polytechnical Institute, 314 Proudfit Bldg., Troy, N.Y.
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Croll, P. D., Sun Oil Co., 1608 Walnut St., Philadelphia, Pa.
Cross, J. S., Dept. of Econ., Pennsylvania State College, State College, Pa.
Dawson, C. C., College Box 124, Berea, Ky.
Degler, C. M., Dept. of Econ., University of New Hampshire, Durham, N.H.
Doremus, W. L., School of Commerce, New York University, Washington Sq., New York 3, N.Y.
Dorman, R. O., U. S. Employment Service, Bldg. U, Constitution Ave., Washington 5, D.C
Douglas, Miss E., Agricultural Annex, Iowa State College, Ames, Iowa.
Edwards, A. B., Allegheny College, Meadville, Pa.
Edwards, E. E., Indiana University, Bloomington, Ind.
Eells, LeC. H., 549 River Ave., South Bend 6, Ind.
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The Committee on Research in the Social Sciences, Australian National Research Council, has initiated Australian Social Science Abstracts. Copies can be obtained from the editor, Faculty of Commerce, University of Melbourne, Carlton N.3., for a subscription of 4/- per annum.

Robert S. Aspinwall died December 16, 1945.

Edwin F. Dummeier, a member of the faculty of Washington State College, Pullman, passed away on June 17.

Corliss L. Parry, who had for several years taught at Ohio State University and Columbia University, died June 30, at the age of 45. Well known in insurance and teaching circles as an authority on the economics of finance and investment, he was for the last fifteen years on the economic research staff at the home office of the Metropolitan Life Insurance Company. At the time of his death he was a senior research associate there.

Leonard J. Salter, Jr., associate professor in agricultural economics at the University of Wisconsin, perished with his wife, Gertrude Salter, and their only child, Leonard J. Salter, III, in the Hotel LaSalle fire in Chicago on June 5.

Appointments and Resignations

Albert Abrahamson, who has been on leave as assistant to the Secretary of Labor, is returning to Bowdoin College for the fall trimester.

George P. Adams, Jr., has returned to Cornell University after two years' service with the Department of State.

Lewis W. Adams returned to the faculty of Washington and Lee University in June after service in the Navy.

V. Norman Albrecht has left government service to join the staff of the University of Minnesota as instructor in economics.

Sidney S. Alexander has been appointed assistant professor in the department of economics, Harvard University, upon his return from the Office of Strategic Services.

Eugen Altschul, who served various government agencies during the war while on leave of absence from the University of Minnesota, has been appointed to the Harzfeld professorship of economics at the University of Kansas City.

Vance Q. Alvis, of the University of Virginia, has been appointed assistant professor of economics at the University of Arkansas.

Paul S. Anderson has joined the faculty of the University of Minnesota as an instructor in economics.

William H. Anderson, of the University of Wisconsin, has been appointed associate professor of economics at the University of Southern California.

Charles P. Anson has been appointed head of the department of economics and business administration at Alabama Polytechnic Institute.

Hans Apel has been promoted from instructor to assistant professor of economics in the College of Business Administration of Boston University.

Robert S. Aries has been appointed director of the Northeastern Wood Utilization Council.

E. Burl Austin has joined the faculty of the University of Florida as associate professor of accounting after three years' service in the Armed Forces.

G. L. Bach, who has been on military leave from the Division of Research of the Federal Reserve Board, is now professor and head of the department of economics, Carnegie Institute of Technology.

William H. Baughn, who has been on leave in the Army Air Forces, resumed his position as instructor in rural social economics at the University of Virginia in June.

Richard F. Behrendt is now professor of international affairs at Colgate University.

Konrad Bekker, on leave from the University of Kentucky while serving as Lieutenant in the Army, has resigned as instructor in economics to accept a position in the State Department.

David W. Belcher has been appointed instructor in economics at the University of Minnesota.

Douglas Bellemore, formerly head of the finance department of the University of Toledo and more recently Lieutenant Commander in the Navy, has joined the staff of the economics department at Boston University as associate professor.

Julio N. Berrettoni, formerly of the University of Minnesota, has been appointed assistant professor in the department of economics and sociology at Iowa State College.

Joseph Biery has been appointed associate professor of accounting at the University of Kansas.

Francis M. Boddy has been promoted to the rank of professor at the University of Minnesota.

Arthur M. Borak has returned to his position as associate professor of economics at the University of Minnesota after eighteen months' service at the Army University in Biarritz and at training schools in Germany.

Daniel Borth, Jr., has been made associate professor of accounting, School of Business, University of Chicago.

Kenneth E. Boulding, of Iowa State College, has been appointed chairman of the department of economics and political science, McGill University.

Philip D. Bradley, assistant professor of economics at Harvard University, has been granted a leave of absence for one year from September 1, 1946, having been awarded a Guggenheim Foundation Fellowship which will take him to Latin America for the investigation of public finances.

Buford Brandis, formerly a member of the research staff of the Federal Reserve Bank of Atlanta, is now associate professor of business administration at the School of Business Administration of Emory University.

Paul P. Brown has resigned as assistant professor of marketing at the University of North Carolina.

Yale Brozen, formerly of the Illinois Institute of Technology, has been appointed associate professor of economics at the University of Minnesota.

Franklin L. Burdette, of Butler University, has been appointed associate professor of government and politics in the College of Business and Public Administration, University of Maryland.

Jesse V. Burkhead has left the Bureau of the Budget to accept a position as assistant professor of finance at Lehigh University.

Robert S. Bussell is now assistant professor of marketing at the Oklahoma Agricultural and Mechanic College.

Grant H. Calder has been promoted to the rank of assistant professor in the School of Business, University of Utah.

R. P. Calhoon, formerly personnel manager of Kendall Mills, has been appointed professor of personnel management at the University of North Carolina.

Chris D. Calsoyas has been appointed instructor in economics at Yale University.

C. C. Carter has been appointed associate professor of business law in the School of Commerce of the University of North Carolina.

James E. Chace has been promoted from acting head to head professor of the department of real estate, University of Florida.

A. Hamilton Chute has resigned his position at the University of Minnesota to become professor of marketing at the University of Toledo.

W. W. Cook has resigned from Marysville State Teachers College to become associate professor of marketing at Kansas State College.

William W. Cooper has resigned as instructor in economics in the College of the University of Chicago to be assistant professor of economics at Carnegie Institute of Technology.

John M. Crawford, formerly with the Division of Research of the Federal Reserve Board and recently released from active duty as Lieutenant Commander in the United States Public Health Service, has become assistant professor of economics at Carnegie Institute of Technology.

A. W. Currie, formerly of the University of British Columbia and of the Department of Reconstruction in Ottawa, has joined the staff of the department of political economy, University of Toronto.

Roy E. Curtis, formerly dean of the School of Business and Public Administration, has returned to the University of Missouri as professor of economics after serving with the Office of Price Administration during the war.

H. H. Cutler has been promoted to associate professor in the School of Business, University of Utah.

Amando M. Dalisay, senior agricultural economist for the past two years in the Office of the President of the Philippines in Washington, has been appointed special assistant and chief of division in the Office of Foreign Relations of the Philippine government, Manila.

Melvin G. De Chazeau, formerly associate professor of economics at the University of Virginia, has resigned to accept a position as professor in economics at the University of Chicago.

Merrill DeVoe has been appointed associate professor of marketing at the University of Kentucky.

Catherine Di Gioia has been appointed instructor in sociology, New Jersey College for Women.

Richard P. Doherty, on leave of absence from 1943–45 to serve as emergency fuel and food administrator for the State of Massachusetts, has been named head of the department of economics at Boston University.

Evsey D. Domar has resigned from the Division of Research and Statistics of the Federal Reserve Board and has become assistant professor of economics at Carnegie Institute of Technology, after serving as visiting lecturer in economics at the University of Michigan during the summer.

Elvin F. Donaldson has been promoted to the rank of professor of business organization at the Ohio State University.

C. H. Donovan, formerly Lieutenant Commander in the Navy, has returned to the University of Florida as associate professor of economics.

Francis Doody, formerly instructor at Massachusetts Institute of Technology and more recently Lieutenant in the Navy, has been named assistant professor of economics at Boston University.

Thomas W. Douglas, recently instructor in commerce at the University of Pennsylvania, has been appointed assistant professor of commerce at the University of Virginia.

Acheson J. Duncan has been appointed associate professor of political economy at the Johns Hopkins University.

R. Y. Durand has been appointed assistant professor of business administration at the University of North Carolina.

G. A. Elliott, of the University of Alberta, has joined the staff of the department of political economy at the University of Toronto.

Herman A. Ellis, who has been a research assistant in the Bureau of Business Research, is now assistant professor of economics at the University of Kentucky.

Howard S. Ellis, since 1943 assistant director, Division of Research and Statistics of the Federal Reserve Board, has returned to the University of California as professor of economics.

Elden J. Facer has been promoted to assistant professor in the School of Business, University of Utah.

Robert H. Ferguson has returned to Cornell University as teaching associate after serving in the Army.

J. S. Floyd has been appointed instructor of economics at the University of North Carolina.

Robert J. Fowks, who served as Lieutenant in the Army, has gone to the University of Missouri as assistant professor of economics.

Arthur M. Freedman has been appointed instructor of economics at Brown University.

John L. Fulmer resumed his duties as associate professor of rural economics at the University of Virginia in November, 1945 after more than four years' service in the Army.

Louis Gaitanis has taken a position as assistant professor of economics at the University of Florida following five years' service with the Social Security Administration.

Dr. Roy L. Garis, of Vanderbilt University, has been appointed professor of economics at the University of Southern California.

Burton Gildersleeve has resigned his position at the Ohio State University to become associate professor of banking at the University of Oklahoma.

Richard M. Goodwin has been appointed assistant professor in the department of economics, Harvard University.

George C. Grosscup, Jr., has become a member of the staff of the department of commerce and economics of the University of Vermont as assistant professor.

P. N. Guthrie has accepted a position as professor of economics at the University of North Carolina.

W. E. Haisley has been appointed instructor of economics at the University of North Carolina.

Franklin P. Hall has resigned from the International Economics Division, Office of Business Economics, Department of Commerce, to accept an appointment to the department of economics, Clark University.

Edwin W. Hanczaryk is an instructor in economics at Brown University.

Morrison Handsaker has been appointed chairman of the economics department of Lafayette College.

Harold E. Hardy, formerly of the University of Missouri, has been named lecturer in marketing at the University of Minnesota.

Seymour E. Harris has been promoted to professor in the department of economics, Harvard University.

Robert D. Haun, on leave of absence while serving as price executive with the Office of Price Administration, has returned to the University of Kentucky.

Earl O. Heady has been promoted from assistant professor to associate professor at Iowa State College.

Walter W. Heller, formerly assistant to the director of the Division of Tax Research of the Treasury, has joined the faculty of the University of Minnesota as associate professor of economics.

John S. Henderson, of Carnegie School of Technology, has been appointed assistant professor of economics and statistics at the University of Florida.

Oscar E. Heskin, formerly with the American Embassy in Oslo, Norway, has returned to the University of Florida as professor of economics.

Paul T. Homan is returning to Cornell University at the beginning of the fall semester after several years' service with the War Production Board, UNRRA, and the War Assets Administration.

Edwin H. Howard returned to the faculty of Washington and Lee University in June after having served with the Office of Price Administration in Roanoke.

Don Humphrey, chief economic adviser for the Office of Military Government in Berlin, has been granted an extension of his leave of absence from Duke University until February, 1947.

Huber C. Hurst is resuming his teaching as professor of business law at the University of Florida after service with the Armed Forces and with the Veterans' Administration.

Leonid Hurwicz, formerly with the Cowles Commission at the University of Chicago, has taken up his duties as associate professor in the department of economics and sociology at Iowa State College.

John G. B. Hutchins has returned to Cornell University after having served since 1942 with the War Shipping Administration.

Charles D. Hyson has been appointed instructor in the department of economics, Harvard University.

John R. Immer, of the University of Illinois, has joined the faculty of the University of Minnesota as assistant professor in the field of industrial management.

Elmo Jackson, formerly instructor at Harvard and more recently in the Armed Forces, has been appointed associate professor of economics and statistics at the University of Florida.

John E. Jeuck has been appointed instructor in marketing in the School of Business, University of Chicago.

Gaston Jeze, professor emeritus of public finance and public law at the University of Paris and an honorary member of the American Economic Association (1926), in a recent letter gives moving details of his life during the war. Professor Jeze, an outstanding public figure in France, and his daughter, were imprisoned because they refused to collaborate with the Vichy regime. When the Germans marched into Paris he fled to the South. He was persecuted and robbed during the occupation. He returned to Paris in April of this year and has already published the first postwar issue of his well-known quarterly, *Revue de Science et de Législation Financières*. Friends of Professor Jeze, many of whom have inquired about his fate, will be pleased to hear that he has taken up residence again at his old home, 126 Blvd. Montparnasse, Paris. While most of his property has been stolen by the Germans, his famous private library is still intact. Although Professor Jeze is 77 years old, he has resumed his activities as editor and writer and intends to continue the work which was interrupted by the war.

Lewis K. Johnson has been promoted from assistant professor to associate professor of commerce at Washington and Lee University.

J. A. Johnston, head of the department of accounting at the University of Utah, retired in June.

M. J. Jucius has been promoted to the rank of professor of business organization at the Ohio State University.

Frank S. Kaulback, Jr., has been appointed assistant professor of accounting at the University of Virginia.

James W. Kelley, on leave of absence for three years while serving as analyst in the Bureau of Labor Statistics, has returned to Boston University as associate professor of economics.

Leonard A. Kent has been appointed instructor in statistics in the School of Business, University of Chicago.

Marshall D. Ketchum has resigned as professor of economics at the University of Kentucky to accept a position at the University of Chicago.

C. A. Kirkpatrick has been appointed associate professor of marketing at the University of North Carolina.

H. E. Klontz has resigned as instructor in economics at the University of North Carolina to accept an associate professorship in economics at Alabama Polytechnic Institute.

F. J. Kottke has been appointed associate professor of economics at the University of North Carolina.

B. C. Lemke has been promoted from assistant professor to associate professor at Iowa State College.

Wassily Leontief has been promoted to professor in the department of economics, Harvard University.

J. Wayne Ley has been promoted to the rank of professor of business organization and has

assumed duties as assistant dean of the College of Commerce and Administration at the Ohio State University.

Charles E. Lindblom has been appointed assistant professor of economics at Yale University.

Michael F. M. Lindsay has been appointed lecturer in the department of economics, Harvard University.

C. L. Littlefield, of the University of Louisiana, has been made instructor of business organization at the Ohio State University.

Richard E. Lundquist is returning to the staff of the School of Business Administration at the University of Minnesota following a year's study at Northwestern University.

Joseph O. McClintic has been made associate professor of economics at San Diego State College.

John B. McFerrin was promoted from associate professor to professor of economics at the University of Florida upon his return from service in the Navy.

Clarence McGregor has resigned from the research staff of the Federal Reserve Bank of Kansas City to accept a position as professor of marketing at the University of North Carolina.

Jess McNish, of the University of Nebraska, has gone to the University of Kansas as instructor in business law.

James R. McPherson has joined the staff of Boston University as instructor in economics after service with the Armed Forces.

Robert C. Manhart, who has been on leave from the University of Missouri working with the Sylvania Electric Products Inc., has returned as associate professor of economics.

Yves R. Maroni is an instructor of economics at Brown University.

Donald B. Marsh has been granted a year's leave of absence from the department of economics of Barnard College.

D. F. Martin has resigned as assistant professor of economics at the University of North Carolina to continue his work as economic analyst with the Allied Military Government in Berlin.

Gordon L. Mattson, recently discharged from the Navy, has returned to the University of Minnesota as instructor in economics and accounting.

Ellis C. Maxcy, general personnel relations supervisor of the Southern New England Telephone Company, has been appointed lecturer in economics at Yale University.

Lloyd A. Metzler, formerly with the Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, has been appointed assistant professor of economics at Yale University.

Allen Meyer is serving as secretary of the College of Commerce and Administration at the Ohio State University in addition to his duties as assistant professor of business organization.

Raymond F. Mikesell, formerly assistant professor of economics at the University of Washington and recently head economist in the Monetary Research Division of the Treasury, has been appointed associate professor of economics at the University of Virginia.

Robert B. Miner has returned from the Army University of Okinawa to become instructor of business organization at the Ohio State University.

George M. Modlin has been appointed president of the University of Richmond.

Donald A. Moore has been appointed instructor of economics at Brown University.

Kenneth V. Moses has been appointed instructor in business law at the University of Kansas.

Herbert Newman, of the University of Delaware, has been made associate professor of economics at the University of Florida.

Hermann C. Nolen has been promoted to the rank of professor of business organization at the Ohio State University.

Paul M. O'Leary has been appointed dean of the new School of Business and Public Administration at Cornell University.

Edgar Z. Palmer has resigned as professor of economics at the University of Kentucky to accept a position at the University of Nebraska.

Andreas G. Papandreou was made instructor in the department of economics, Harvard University, upon his return from the service.

W. W. Pate has accepted an appointment as instructor in economics at the University of North Carolina.

Raymond J. Penn has been assistant professor in agricultural economics at the University of Wisconsin since February.

Robert B. Pettengill is director of the Teaching Institute of Economics, operated under a grant from the Alfred P. Sloan Foundation, Inc., at the University of Southern California.

Clyde W. Phelps, formerly head of the department of economics and commerce at the University of Chattanooga, has joined the staff of the department of economics at the University of Southern California.

M. Ogden Phillips, of Washington and Lee University, was visiting professor of economic geography at Columbia University during the summer.

Ralph D. Pickett, head of the Department of commerce at Kansas State Teachers College, has been appointed professor of economics at the University of Kentucky.

A. W. Pierpont has taken up duties as instructor in economics at the University of North Carolina.

William H. Pierson has been appointed associate professor of geography at the University of Florida.

Neal Potter, formerly acting chief of the income analysis section, Office of Price Administration, is an instructor in economics at Carnegie Institute of Technology.

Richard Powers, of the University of Virginia, has accepted a position as assistant professor of economics at Clemson College.

William McC. Pritchett, of the University of Virginia, has accepted a position as assistant agricultural economist with the Federal Reserve Bank of Dallas.

Jewell J. Rasmussen has been promoted to the rank of assistant professor in the School of Business, University of Utah.

Melvin Reder has resigned as research associate in the Money Flows Project of the National Bureau of Economic Research to become assistant professor of economics at Carnegie Institute of Technology.

Charles F. Reynolds, Jr., of the University of Virginia, has accepted a position as agricultural economist with the Federal Reserve Bank of Atlanta.

Gaines M. Rogers, of the University of Virginia, has been made assistant professor of economics at Baylor University.

Benjamin A. Rogge, formerly a member of the faculty of the University of Nebraska, has joined the staff of the department of economics at the University of Minnesota as an instructor.

R. H. Rowntree has resigned his position as assistant professor of economics at the Ohio State University to continue his work with the Department of Commerce.

A. W. Sadler has been appointed associate professor of accounting at the University of North Carolina.

G. T. Schwenning has resumed his duties as professor of business administration at the University of North Carolina following his release as director of the business management section of the Armed Forces University at Shrivenham, England.

William B. Seiniger, recently a lieutenant in the Army, has been appointed instructor in marketing in the College of Business and Public Administration, University of Maryland.

Joseph E. Shafer, of the University of Akron, has been appointed head of the department of economics and business administration at the University of New Hampshire.

Nelson C. Shafer, Jr., formerly of the Indiana University, has been made instructor in marketing at the University of Kansas.

Eli Shapiro has been appointed assistant professor of business economics at the School of Business of the University of Chicago.

Murray W. Shields has been appointed associate professor of economics at the University of Florida.

Peter D. Shilland has been appointed associate professor of economics at West Virginia University.

Ronald B. Shuman has returned to his teaching duties at the University of Oklahoma as professor of business management following five years' service in the Army, in which his last assignment was as Colonel, General Staff Corps, with the Office of Military Government in Berlin, Germany.

C. Gordon Siefkin, formerly assistant to the president at Southwestern University, and more recently in charge of the program in economics at Shrivenham American University, is now professor of economics at the School of Business Administration of Emory University.

Paul B. Simpson is returning to Cornell University as teaching associate after serving in the Army.

P. P. Smith has been appointed instructor in accounting at the University of North Carolina.

Theodore H. Smith, of the University of Oklahoma, is now dean of the School of Business of the University of Montana.

Frank A. Southard, Jr., after serving in the Navy, chiefly as financial adviser at Allied Force Headquarters in Italy, has resumed his duties at Cornell University and has been appointed chairman of the department of economics.

Irving A. Spaulding has been appointed assistant professor of sociology, New Jersey College for Women.

William A. Spurr, formerly Lieutenant Commander in the Navy and more recently associate professor of statistics at the University of Chicago School of Business, has accepted a professorship at Stanford University.

Armand C. Stalnaker, who has been appointed assistant professor of business organization at the Ohio State University, will have the duties of placement director of the College of Commerce and Administration.

Hubert F. Stepp, of the University of Virginia, has been appointed assistant professor of economics at the University of Arkansas.

Robert C. Strahl, of the Ohio State University, has become assistant professor of marketing at the University of Nebraska.

Roland Stucki has been promoted to associate professor in the School of Business, University of Utah.

Sidney C. Sufrin, recently returned from London where he was with the Mission for Economic Affairs, United States Embassy, has accepted an associate professorship in business administration and economics at Syracuse University.

Janet Sundelson will be an instructor in economics at Barnard College for the coming year.

Harry W. Sundwall has been promoted to the rank of assistant professor in the School of Business, University of Utah.

Robert Tannenbaum is instructor in business economics and industrial relations in the School of Business, University of Chicago.

Albion G. Taylor has returned to his position as head of the department of economics at the College of William and Mary after a four years' leave of absence first serving the War Manpower Commission and later as chief of the Food Industries Division, Office of Labor, Department of Agriculture.

Jacob B. Taylor, professor of accounting at the Ohio State University, has assumed the position of business manager of the university.

M. D. Taylor has resigned as professor of marketing at the University of North Carolina to serve as economic analyst with the Allied Military Government in Berlin.

Howard M. Teaf, Jr., has been promoted to the rank of professor in the department of economics at Haverford College.

R. Paul Terrell has been appointed assistant professor of geography at the University of Florida.

Herman P. Thomas has been named chairman of the department of economics at the University of Richmond.

Gerhard Tintner has been promoted from associate professor to professor of economics and econometrics at Iowa State College.

William A. Tolman, who was on leave of absence while serving as price executive of the Office of Price Administration, has returned to the University of Kentucky.

Alvin E. Touhino, of the University of Wyoming, has been appointed assistant professor of accounting at the University of Kansas.

Orba F. Trayler, until recently chief of the lend-lease accounting office in Cairo, and acting chairman of the department of economics at Kenyon College during the summer term, will go to the University of Denver in the fall quarter.

J. Alden Trovillo has been appointed associate professor of industrial management at the University of Kansas.

F. W. Tuttle, who was with the War Labor Board and later with the Bureau of Labor, has resumed his duties as assistant professor of economics at the University of Florida.

Roland S. Vaile, professor of economics and marketing at the University of Minnesota, is spending a year's sabbatical leave in study and travel in California.

Edward R. Van Sant, recently returned from Chungking and Shanghai where he served with the Foreign Economic Administration, has accepted a position in the International Resources Division of the Department of State.

William J. Vatter has been promoted from assistant professor to associate professor of accounting in the University of Chicago School of Business.

Irving H. Wallace has rejoined the faculty of the University of Minnesota as instructor in economics and marketing after several years' absence in the service of the government and the Armed Forces.

Allen Wallis has been appointed professor of statistics in the School of Business, University of Chicago.

Robert B. Wentworth has joined the staff of the department of commerce and economics at the University of Vermont as instructor in economics.

Miriam E. West has been advanced from assistant professor to associate professor at New Jersey College for Women.

Fred Weston has been appointed instructor in finance in the School of Business, University of Chicago.

Francis S. Wilder, formerly economist in the Research Division of the Office of Price Administration, has been appointed visiting assistant professor at Duke University.

Richard L. Williamson, of the University of Buffalo, has become a member of the staff of the division of social sciences at Wheaton College, Illinois, as instructor in economics and business.

Robert L. Winestone, formerly of the University of Oregon, has joined the staff of the University of Minnesota as instructor in economics.

Francis Wingate has become an assistant professor of marketing at Syracuse University after serving in the Armed Forces.

John B. Woosley has been appointed head of the department of economics and commerce at the University of North Carolina.

Howard Wright has gone to the University of Florida as associate professor of accounting after having served in the Armed Forces three years.

Howard W. Wright, until recently Captain in the Army, has been appointed associate professor of accounting in the College of Business and Public Administration of the University of Maryland.

George Zeiss, Jr., of Louisiana State University, has been appointed assistant professor of business communication at the University of Kansas.

FORTY-THIRD LIST OF DOCTORAL DISSERTATIONS IN POLITICAL ECONOMY IN PROGRESS IN AMERICAN UNIVERSITIES AND COLLEGES

The first list of this kind was dated January 1, 1904, and was sent to all members, but not regularly bound in the publications. A notation as to the earlier lists, extending from 1905 to 1927, may be found in the *Review* for September, 1927, page 574. Annual lists thereafter are to be found in the September number of the *Review* for each year.

The present list specifies doctoral degrees conferred, doctoral dissertations completed and accepted by the various universities, and the theses still in preparation. The last date given is the probable date of completion. In cases where the publishers of completed dissertations were given, this information has been reported.

The list represents the status of the several theses on June 15, 1946, except for a few items later reported as completed or published.

Economic Theory; General Works

Degrees Conferred

BENJAMIN HAFSTEINN JON EIRIKSSON, Ph.D., Harvard, 1946. The nature of interest and money.

JOHN FAGG FOSTER, Ph.D., Texas, 1946. Theoretical foundations of government ownership in a capitalistic economy.

MELVIN WARREN REDER, Ph.D., Columbia, 1946. The theory of welfare economics.

JAMES HARTMAN STAUSS, Ph.D., Wisconsin, 1946. The entrepreneur: the firm.

Theses in Preparation

DANIEL K. ANDREWS, B.A., Wisconsin, 1935; M.A., 1942. An introduction to a theory of interest. 1947. *Ohio State.*

RICHARD VERNON CLEMENCE, Ph.B., Brown, 1934; M.A., 1936; A.M., Harvard, 1940. The theory of economic maturity. 1947. *Harvard.*

JOSEPH CROPSEY, A.B., Columbia, 1939; A.M., 1941. The concept of economic expansion. 1947. *Columbia.*

HAROLD S. DIAMOND, B.S., College of City of New York, 1937; A.M., Columbia, 1939. Studies in innovation theory. 1947. *Columbia.*

BERT FRANK HOSELITZ, D.Jur., Vienna, 1936; A.M., Chicago, 1945. The Austrian school of economics. 1946. *Chicago.*

MOTHER JEANNETTE KIMBALL, R.S.C.J., A.B., Barat, 1937; A.M., Marquette, 1942. The economic doctrines of John Gray (1799–1850). 1946. *Catholic.*

CLIFTON HOLLAND KREPS, JR., B.A., William and Mary, 1941; M.A., North Carolina, 1942. A study in economic analysis under conditions of less-than-full employment. 1947. *Duke.*

ARTHUR LEIGH, B.A., Colgate, 1941. Studies in the development of the theory of capital and interest from Locke to Walras. 1946. *Chicago.*

JAMES WILDON LONGLEY, B.A., Texas Agricultural and Mechanical, 1936; M.S., 1937; M.A., Harvard, 1936. Sismondi, predecessor of Karl Marx and John M. Keynes. *Harvard.*

CHRISTINE HARRISON MCGUIRE, B.A., Muskingum, 1937; M.A., Ohio State, 1938. Economic incentives. 1946. *Chicago.*

JAMES N. MORGAN, B.A., Northwestern, 1939; M.A., Harvard, 1941. The elimination of unearned gains and losses. 1947. *Harvard.*

RICHARD E. MULCAHY, B.A., Gonzaga, 1939; M.A., 1940. The economic theories of Heinrich Pesch. 1947. *California.*

CLARENCE EDWARD PHILBROOK, B.A., Chicago, 1936. The policy implications of the theoretical controversy over the effects of rigid wages. 1947. *Chicago.*

LEONARD HENRY RALL, B.A., Nebraska, 1935; M.A., 1937. A critical analysis of some of the aspects of the theory of the mature economy. 1946. *Wisconsin.*

EUGENE ROTWEIN, B.A. and M.A., Wisconsin, 1939. The political economy and economic philosophy of David Hume. 1946. *Chicago.*

ARNOLD WILLIAM SAMETZ, B.A., Brooklyn, 1940; M.A., Princeton, 1942. The mature economy. 1947. *Princeton.*

GEORGE SCHULLER, B.S., New York, 1931; M.A., 1934. Bargaining power and its effects on prices and income. 1947. *Columbia.*

BERNICE SHOUL, B.A., Radcliffe, 1941; M.A., Columbia, 1943; M.A., Radcliffe, 1945. Breakdown theory in Marx. *Harvard.*

HARLAN MONELL SMITH, B.A., Chicago, 1936; M.A., 1938. The price mechanism and the concept of social value. 1946. *Chicago.*

ALVA MORRIS TUTTLE, B.A., Butler, 1923; M.S., Iowa State, 1928. Wage determination: a theoretical and statistical analysis. 1947. *Ohio State.*

Economic History

Degrees Conferred

FELICIA JOHNSON DEYRUP, Ph.D., Columbia, 1946. Arms makers of the Connecticut Valley.

JAMES HAROLD EASTERBY, Ph.D., Chicago, 1945. The South Carolina rice plantation.

ROBERT MOFFETT HALE, Ph.D., Chicago, 1945. The United States and Japanese immigration.

Theses in Preparation

WILLIAM HUBERT BAUGHN, B.S., Alabama, 1940; M.A., Virginia, 1941. Virginia's economic development. 1947. *Virginia.*

SHIRLEY AKERMAN BILL, B.A., Chicago, 1941; M.A., 1942. The meaning and background of the inter-state comity provision of the federal constitution. 1946. *Chicago.*

WILLIAM R. BRAISTED, B.A., Stanford, 1939; M.A., Chicago, 1940. The development of the Pacific as an American naval problem before 1909. 1946. *Chicago.*

JOSEPH L. FISHER, B.S., Bowdoin, 1935; M.A., Harvard, 1938. The economic development of Alaska. 1947. *Harvard.*

HENRI FOLMER, M.A., Denver, 1939. French expansion in the trans-Mississippi Southwest during the eighteenth century. 1946. *Chicago.*

ABRAHAM LOUIS GITLOW, B.A., Pennsylvania, 1939; M.A., Columbia, 1940. Economic history of a South Sea island. 1947. *Columbia.*

HARRY FRANKLIN JACKSON, B.A., Marshall, 1933; M.A., West Virginia, 1937. Technological development of Central America to 1907. 1946. *Chicago.*

GALE WILLIAM MCGEE, B.A., Nebraska State Teachers, 1936; M.A., Colorado, 1939. Offers of alliance from the Great Powers to the United States 1789–1823. 1946. *Chicago.*

WILLIAM HARVEY MAEHL, B.S., Northwestern, 1937; M.A., 1939. The German Social Democratic party and the idea of international cooperation, 1918–32. 1946. *Chicago.*

EDWARD MARZ, Dipl. Bus. Adm., Vienna, 1933; Dipl. Pol. Econ., 1937; M.A., Harvard, 1943. An economic history of the Austrian Republic. 1946. *Harvard.*

MARTHA C. MITCHELL, B.A., Alabama, 1943; M.A., Chicago, 1944. A history of Birmingham, Alabama. 1946. *Chicago.*

BEATRICE TREIMAN, B.A., Chicago, 1939; M.A., 1943. Franco-American commerce, 1778–89. 1946. *Chicago.*

National Economies

Degrees Conferred

WILLIAM CHARLES CHAMBERLIN, Ph.D., Columbia, 1946. Economic development of Iceland through World War II.

ROBERT RAY DOCKSON, Ph.D., Southern California, 1946. A study of Japan's economic influence in Manchuria, 1931–41.

HELMUT HIRSCH, Ph.D., Chicago, 1945. Th Saar territory.

SAMUEL LURIÈ, Ph.D., Columbia, 1946. Private investment in a controlled economy: the case of the Nazi economy in its pre-war phase.

EASTIN NELSON, Ph.D., Texas, 1946. The development of economic policy in the Republic of Panama.

Theses in Preparation

SIMEON HUTNER, B.A., Columbia, 1937; M.B.A., New York, 1940. The war economy in nazi Germany. 1947. *Princeton.*

FRANCIS PERLEY TAYLOR MACKINNON, B.A., McGill, 1941; M.A., Toronto, 1942. Government of Prince Edward Island. *Toronto.*

JACK B. PFEIFFER, B.A., Bradley Technology, 1942; M.A., Chicago, 1945. The dawn of manufacturing in Chile. 1946. *Chicago.*

DAVID M. PLETCHER, B.A., and M.A., Chicago, 1941. The development of northwestern Mexico. 1946. *Chicago.*

COY HOYT PRICE, B.S., Virginia, 1938. A study in the economic control of Germany. 1947. *Virginia.*

ELIZABETH MARIE ROSENGREN, B.A., Alberta, 1940; M.A., Toronto, 1942. Wartime controls in Canada. 1947. *Columbia.*

LEONA S. TROTTA, B.A., New York, 1931; M.A., Columbia, 1935. The labor situation in Italy at the close of the first world war and how it paved the way for fascism. 1947. *Columbia.*

NORMAN MCQUEEN WARD, B.A., McMaster, 1941; M.A., Toronto, 1943. Development of government activity in Nova Scotia. *Toronto.*

Statistical Methods; Econometrics; Economic Mathematics; Accounting

Degree Conferred

WILLIAM JOSEPH VATTER, Ph.D., Chicago, 1946. The fund theory of accounting and its implications for financial reports.

Theses in Preparation

REV. DUMAS LEON MCCLEARY, C.S.V., B.S., St. Viator, 1935; M.A., Catholic, 1945. Uniform accounting systems for parishes. *Catholic.*

C. R. NISWONGER, B.S., Miami, 1929; M.S., Illinois, 1931. Accounting for surplus reserves. 1947. *Ohio State.*

JOHN T. WHEELER, B.B.A., Minnesota, 1942. Cost methods and empirical cost functions 1947. *Massachusetts Institute of Technology.*

National Income and Product; Income Distribution; Consumption Statistics

Degrees Conferred

MILTON FRIEDMAN, Ph.D., Columbia, 1946. Income from independent professional practice.

GEORGE JASZI, Ph.D., Harvard, 1946. The concept of national income and national product, with special reference to government transactions.

Theses in Preparation

JANET AUSTRIAN, B.A., Bennington, 1939. Measurement of economic stability: an analysis of consumer income and expenditure by age groups, 1935–36. 1948. *Columbia.*

HARLOW W. HALVORSON, B.S., Minnesota, 1938; M.A., 1940. A study of agricultural income and its relation to national income. 1947. *Minnesota.*

JOHN HOLROYD KEMPSTER, B.S., Missouri, 1938; M.B.A., Chicago, 1939. Accounting principles and the measurement of national income. 1947. *Massachusetts Institute of Technology.*

GEORGE MERVYN KLEINER, B.A., McGill, 1936; M.A., 1937. An analysis of employment and income in the 5th Federal Reserve District 1930–40. 1946. *Wisconsin.*

Business Cycles and Fluctuations

Degrees Conferred

NATHAN BELFER, Ph.D., Harvard, 1946. Technical change and technological unemployment.
ALFRED NICOLS, Ph.D., Harvard, 1946. Cyclical adjustments under oligopoly.

Thesis Completed and Accepted

KENNETH D. ROOSE, B.A., Southern California, 1940. The recession of 1937–38. *Yale.*

Theses in Preparation

RENDIGS T. FELS, B.A., Harvard, 1939; M.A., Columbia, 1940. History of American business cycles, 1865–1939. 1948. *Harvard.*
WILLIAM HAMOVITCH, B.Com., McGill, 1943; M.P.A., Harvard, 1945; M.A., 1946. Wages in the business cycle. 1947. *Harvard.*
WENDELL DEADY HANCE, B.S., Northwestern, 1935; M.A., Harvard, 1942. The secular change in investment with particular reference to the automobile industry. *Harvard.*
EVAN BOND HANNAY, B.A., Washington, 1936; M.A., Stanford, 1937. The machine tool industry in relation to business fluctuations. 1947. *Princeton.*
ELINOR RUTH HARRIS, B.A., Mt. Holyoke, 1944; M.A., Radcliffe, 1945. Rate of interest and management of the public debt. *Harvard.*
GABRIEL SYLFEST HAUGE, B.A., Concordia, 1935; M.A., Harvard, 1938. Banking aspects of Treasury borrowing in World War II. 1946. *Harvard.*
JAMES EARL HICKS, B.A., Washington and Lee, 1936; M.A., North Carolina. Certain aspects of inflation in Italy. 1948. *North Carolina.*
LEONID HURWICZ, LL.M., Warsaw, 1938. Basic postulates of the theory of economic fluctuations and their relation to empirical evidence. 1946. *Chicago.*
ROBERT PAUL SHAY, B.S., Virginia, 1944. A study of overemployment equilibrium. 1947. *Virginia.*
JAMES TOBIN, B.A., Harvard, 1939; M.A., 1940. Demand forecasting. 1947. *Harvard.*
CHARLES S. WYAND, B.A., Pennsylvania State, 1939; M.A., 1944. The economics of replacement demand. 1948. *Columbia.*

Public Finance; Fiscal Policy; Taxation

Degrees Conferred

LUCILE DERRICK, Ph.D., Chicago, 1946. Tax exemption of security interest from income taxes in the United States: an economic and statistical analysis.
M. LOUISE FREIER, Ph.D., Massachusetts Institute of Technology, 1946. The United States excess profits tax in World War II.
THAD LEWIS HUNGATE, Ph.D., Columbia, 1946. Financing the future of higher education.
FRANK SANFORD KAULBACK, JR., Ph.D., Virginia, 1945. The federal budget as an instrument of fiscal control.
HERBERT ELIAS KLARMAN, Ph.D., Wisconsin, 1946. Income taxation in the states.
JOHN VIRGIL LINTNER, JR., Ph.D., Harvard, 1946. Tax restrictions on financing business expansion.
EUGENE ABRAHAM MYERS, Ph.D., Pittsburgh, 1946. History of tax legislation in Pennsylvania up to 1873.
GAINES MADISON ROGERS, Ph.D., Virginia, 1946. A study of carrier tax burdens.
ALFRED CHIEH-CHING TAO, Ph.D., Harvard, 1946. A study of the tax structure in China.

Theses Completed and Accepted

LYLE C. FITCH, B.S., Nebraska State Teachers, 1935; M.A., Nebraska, 1938. Taxing municipal bond income. *Columbia.*

MARGARET M. GARRITSEN, B.A., Michigan, 1943. Some theoretical and practical problems in the management of the federal debt in the postwar period. 1946. *Massachusetts Institute of Technology.*

PAUL EDWARD HANCHETT, B.A., Minnesota, 1937; B.S., 1939; M.A., 1941. Federal income taxation of cooperative associations and their patrons. 1946. *Minnesota.*

NORMAN H. LEONARD, B.A., American, 1939. Public debt management. *Yale.*

WILLIAM SPENCER VICKREY, B.S., Yale, 1935; M.A., Columbia, 1937. Agenda for progressive taxation. *Columbia.*

Theses in Preparation

LOWELL DEWITT ASHBY, B.A., Hastings, 1936; M.A., Nebraska, 1938. The development of the national economic budget. 1946. *Wisconsin.*

ROSEMARY WILEY BRADLEY, B.A., Lawrence, 1935; M.A., Radcliffe, 1939. Mexican public debt. *Harvard.*

GERARD MARION BRANNON, B.A., Georgetown, 1943; M.A., 1944; M.A., Harvard, 1946. Uncertainty in fiscal policy planning. 1947. *Harvard.*

EUGENE CLARK, B.A., Swarthmore, 1939; M.A., Harvard, 1941. The status of farmer cooperatives under the federal income tax. 1946. *Harvard.*

ROBERT MILLS CLARK, B.Com., British Columbia, 1941; B.A., 1942; M.A., Harvard, 1944. Some aspects of the development of the personal income tax in the province and municipalities of Canada up to 1930. *Harvard.*

JACOB COHEN, B.A., Manitoba, 1940; M.A., Cincinnati, 1941. The fundamental similarities and differences in public and private debts. 1946. *Chicago.*

ARTHUR LEE CUNKLE, B.A., Arkansas State Teachers, 1938; M.A., Kansas, 1939. Recent trends in property taxation in the United States. 1947. *Virginia.*

H. H. CUTLER, B.S., Utah State, 1933; M.S., Iowa State, 1934. A study of property tax levies in Utah. 1947. *Iowa State.*

WILLIAM PYRLE DILLINGHAM, B.A.E., Florida, 1934; M.S., Tennessee, 1942. Federal aid to veterans in the United States, 1917–46. 1947. *Duke.*

CHARLES H. DUFTON, B.A., Yale, 1934; M.A., Michigan, 1936. The federal budget as an economizing instrumentality—a study of techniques in budgeting recently advocated for full employment fiscal policy. 1947. *Harvard.*

GENE LLOYD ERION, B.A., Doane, 1939; M.A., Wisconsin, 1940. The probable effects of the future use of the federal debt in cycle policy. 1947. *Wisconsin.*

RICHARD BENJAMIN GOODE, B.A., Baylor, 1937; M.A., Kentucky, 1939. An economic analysis of the federal corporate income tax. 1947. *Wisconsin.*

BYRON LINDBERG JOHNSON, S.B., Iowa State, 1938; Ph.M., Wisconsin, 1940. Federal aid to the states. 1947. *Wisconsin.*

JAMES RUDOLPH KAY, B.A., Birmingham-Southern, 1938. Fiscal and monetary policy in the war period. 1947. *Virginia.*

RANDALL T. KLEMME, B.A., Grinnell, 1932. The graduated land tax. 1946. *Iowa State.*

DONALD WILLIAM O'CONNELL, B.A., Columbia, 1937; M.A., 1938. Evaluation of public borrowing. 1947. *Columbia.*

JEWELL JENS RASMUSSEN, B.S., Utah, 1934; M.S., 1936. Severance taxation in Utah. 1947. *Stanford.*

RALPH IRA THAYER, B.A., Northwestern, 1937; M.A., Washington, 1944. Recent fiscal policies in the State of Washington. 1946. *Stanford.*

ALICE JOHN VANDERMEULEN, B.A., Bryn Mawr, 1939; M.A., Radcliffe, 1945. A case history in New England town finance. *Harvard.*

Money and Banking; Short-Term Credit

Degrees Conferred

AMANDO MUNSAYAC DALISAY, Ph.D., Harvard, 1946. Supervised credit for low-income farm groups in the United States.

ELI SHAPIRO, Ph.D., Columbia, 1946. Credit union development in Wisconsin. (Published as No. 525, Columbia Studies in History, Economics, and Public Law.)

Theses in Preparation

WILLIAM O. ANDERSON, B.S., Ohio State, 1938; M.A., 1941. An analysis of bank deposits. 1947. *Ohio State.*

SISTER MARY ALEXINE BEATTY, S.S.J., B.A., Boston College, 1939; M.A., Catholic, 1942. Bank failures in the District of Columbia, 1900–1945. *Catholic.*

WILLIAM CASTLE BRADFORD, B.S., Syracuse, 1942; M.A., 1944; M.A., Harvard, 1946. Secular changes in the velocity of money. *Harvard.*

ARTHUR BRICKNER, M.S., Columbia, 1941. Monetary controls. 1947. *Columbia.*

C. K. CHOW, B.A., Ohio Wesleyan, 1941; M.B.A., Ohio State, 1943. Factors determining the monetary unit. 1947. *Ohio State.*

DONALD A. FERGUSSON, B.A., Dalhousie, 1932; M.B.A., Chicago, 1945. A reconsideration of the functions and organization of the Federal Reserve System. 1946. *Chicago.*

BURTON H. GILDERSLEEVE, B.S., Iowa, 1926; M.B.A., New York, 1933. Problems involved in the financing of commercial banks. 1948. *Ohio State.*

WILLIAM E. KOENKER, B.A., North Dakota Teachers College, 1934; M.A., North Dakota, 1938. A study of bank failures in North Dakota, 1920–35. 1948. *Ohio State.*

RUSSELL CRAIG McIVOR, B.A., Western Ontario, 1937; M.A., Chicago, 1939. Monetary expansion in Canadian war finance, 1939–45. 1947. *Chicago.*

GORDON WELLS McKINLEY, B.A., McMaster, 1938; M.A., Ohio State, 1940. The development of monetary and banking theory in the United States since 1930. 1947. *Ohio State.*

WILBUR T. MEEK, B.A., Princeton, 1922. A history of Mexican money. 1947. *Columbia.*

NEWTON BELMONT PARKER, B.A., Harvard, 1929; M.A., 1944. The Bank of Brazil. *Harvard.*

ANNA JACOBSON SCHWARTZ, B.A., Barnard, 1934; M.A., Columbia, 1935. State banking before the Civil War; a study of Pennsylvania banking. 1947. *Columbia.*

RICHARD TULOSS STEVENS, B.A., Ohio State, 1926; M.A., 1931. Economic implications of the changing character of bank assets. 1947. *Ohio State.*

ROBERT C. WEEMS, B.S., Mississippi State, 1931; M.B.A., Northwestern, 1934. The Bank of the State of Mississippi, 1809–1834. 1947. *Columbia.*

International Trade, Finance and Economic Policy

Degrees Conferred

JOHN HANS ADLER, Ph.D., Yale, 1946. Determinants of the volume of foreign trade of the United States, 1920–1938.

GEORGE HAY BROWN, Ph.D., Chicago, 1945. The international economic position of New Zealand. (Published by Journal of Business, Studies in Business Administration, Vol. XVI, Nos. 1 and 2, April, 1946.)

GEORGE HUDDLESTON FAUST, Ph.D., Chicago, 1946. Economic relations of the United States and Colombia, 1920–40.

JOHN FREDERICK GARDNER, Ph.D., Pittsburgh, 1946. The lend-lease program of World War II; analysis and appraisal.

ANTHONY YING CHANG KOO, Ph.D., Harvard, 1946. Studies in the theory of exchange equilibrium.

WALTER KRAUSE, Ph.D., Harvard, 1946. Regional shifts in industry.

YVES ROBERT MARONI, Ph.D., Harvard, 1946. The theory of international trade under monopolistic competition.

NICHOLAS MICHAEL PETRUZZELLI, Ph.D., Catholic, 1946. Some technical aspects of foreign trade statistics with special reference to valuation. (Published by Catholic Univ. of America Press.)

LAURENCE JOSEPH DE RYCKE, Ph.D., California. The significance of the important supplier principle as applied in the negotiation of reciprocal trade agreement concessions.

SAMUEL SAUL SHIPMAN, Com. Sci. D., New York, 1946. The outlook for Soviet-American economic relations.

PAUL ANTHONY VOLPE, Ph.D., Catholic, 1946. The international monetary and banking crisis of 1931. (Published by Catholic Univ. of America Press.)

Thesis Completed and Accepted

CLINTON WILSON RANDLE, B.A., Duke, 1931; M.A., 1938. United States trade with Latin America. 1946. *Kentucky.*

Theses in Preparation

MARTIN AYLMER BITZ, B.A., Saskatchewan, 1943; M.A., Toronto, 1944. Some aspects of Canadian foreign trade. *Toronto.*

JAMES CHRISTOPHER, B.A., Chicago, 1944; M.A., 1945. American aid to Japanese aggression. 1946. *Chicago.*

ALVIN E. COONS, B.A., Iowa, 1932; M.S., Iowa State, 1939. Certain conflicts in United States agricultural and foreign trade policies. 1946. *Iowa State.*

ALEXANDER ECKSTEIN, B.S., California, 1939; M.S., 1941. Development of economic relations between the U.S.S.R. and the countries of eastern and central Europe. 1947. *California.*

HUGH KYLE HAWK, B.A., Birmingham-Southern, 1941; M.A., Virginia, 1943. Economic aspects of British foreign trade policy, 1840–1885. 1947. *Virginia.*

KUANG TAI HU, B.Com., Nankai, 1939; M.B.A., Harvard, 1943; M.A., 1944; Ph.M., Wisconsin, 1941. International economic problems of China. 1947. *Harvard.*

GEORGE ROSEN, B.A., Brooklyn, 1940; M.A., Princeton, 1942. Effect of the industrialization of undeveloped countries upon the economic position of the United States. 1947. *Princeton.*

JOHN W. SIMPSON, B.A., Ohio State, 1927; M.A., 1935. Balance of international payments, 1900–1947. 1947. *Ohio State.*

SYDNEY MEYER SPIELVOGEL, B.S., College of City of New York, 1944; M.A., Harvard, 1946. Balance of payments mechanism of raw material producing countries. *Harvard.*

EMIL G. SPITZER, Jur.D., Vienna, 1927; M.A., Harvard, 1943. The effect of synthetic production on world trade in basic raw materials. 1946. *Harvard.*

MOTHER DEAN ELIZABETH TRAYNOR, R.S.C.J., B.A., Barat, 1937; M.A., Marquette, 1942. International monetary and financial conferences, 1900–1945. 1946. *Catholic.*

SECH-CHAU WONG, B.S.C., National Chi-nan University; M.A., Michigan, 1941. China as an outlet for American capital. 1947. *New York.*

CHEE HSIEN WU, M.A., Wisconsin, 1945; M.A., Harvard, 1946. Russia's foreign trade and her economic development, 1917–1941. 1947. *Harvard.*

YUNG-SHUN WU, B.A., Customs College, China, 1935; M.A., Wisconsin, 1943. Economic effects of the wool tariff in the United States. 1946. *Wisconsin.*

Business Finance; Insurance; Investments; Securities Markets

Degrees Conferred

SIDNEY STUART ALEXANDER, Ph.D., Harvard, 1946. Financial structure of American corporations since 1900.

ORSON HART, Ph.D., Yale, 1946. Life insurance investments in bonds and stocks, 1929–1944.

CHEN TING, Ph.D., Harvard, 1946. Industrialization, capital formation and internal savings.

WILLARD B. VAN HOUTEN, Ph.D., Yale, 1946. Preferred stocks of United States railroads as investments.

Thesis Completed and Accepted

JOEL B. DIRLAM, B.A., Yale, 1936. Regulations of security issues under the Public Utility Holding Company Act. *Yale.*

Theses in Preparation

ALBERT H. DEHNER, B.S., Ohio State, 1936; M.B.A., 1939. Relation of the speed of stock market movements and the extent of fluctuations in stock prices. 1948. *Ohio State.*

SERGEI PAVLOVITCH DOBROVOLSKY, Dipl., Harbin, 1930; M.A., Columbia, 1942. Retention of corporate earnings. 1948. *Columbia.*

JACOB OSWALD KAMM, B.A., Baldwin-Wallace, 1940; M.A., Brown, 1942. Theory of stock market operations; national and international. 1947. *Ohio State.*

LEONARD KENT, B.S., Georgia Teachers, 1935; M.B.A., Chicago, 1940. Effects of inheritance tax on the pattern of investment. 1946. *Chicago.*

ARTHUR F. MESSENGER, B.A., Ohio Wesleyan. Liquidity in the security markets. 1947. *Ohio State.*

PING-HOU-WANG, B.A., Tsing-hua, 1932; M.A., Columbia, 1941. Fair return on equity capital. 1947. *Columbia.*

SAMUEL AUSTIN REEP, B.B.A., Minnesota, 1935; M.A., 1940. The investment company as an agency for financing new business enterprise: a case study. 1946. *Chicago.*

HENG-KANG SANG, B.A., Tsinghua, China, 1939; M.A., Nankai, 1943; M.A., Harvard, 1946. The mechanism of capital formation. 1947. *Harvard.*

VIRGIL SCHARRER, B.A., De Pauw, 1935; M.A., Chicago, 1944. Investment outlay, profit, and the rate of capital growth. 1947. *Chicago.*

MU PIN YEN, B.A., Nankai, 1938; M.A., Michigan, 1939. The role of development loan in post-war industrialization. 1946. *Harvard.*

Public Control of Business; Public Administration; National Defense and War

Degree Conferred

IRWIN RANDOLPH HEDGES, Ph.D., Wisconsin, 1946. Price control of dairy products during World War II.

Theses in Preparation

KARL A. BOEDECKER, Ph.B., Wisconsin, 1937; M.A., 1940. A critical appraisal of the anti-trust policy of the United States government 1933–1945. 1947. *Wisconsin.*

GUSTAV DREWS, LL.B., Brooklyn Law, 1917; J.D., 1932; M.A., New York, 1941. The position of the patent right in a national economy. 1947. *New York.*

GEORGE CHARLES GROSSCUP, JR., B.A., Beloit, 1937; M.A., Miami, 1940. Wartime food subsidies. 1946. *Wisconsin.*

RALPH CARL HOEBER, B.A., Oregon, 1921; M.A., 1923; J.D., Stanford, 1927. Development of public utility regulation in Oregon. 1947. *Wisconsin.*

JOHN MAY, B.S., Missouri, 1934; M.A., 1939. Standards and patterns of economic control—Federal Trade Commission. 1947. *Pittsburgh.*

MELVILLE J. ULMER, B.S., New York, 1937; M.A., 1938. Free enterprise and price control. 1947. *Columbia.*

Industrial Organization; Price and Production Policies; Business Methods

Degree Conferred

Charlotte Feldman Muller, Ph.D., Columbia, 1946. Light metals monopoly. (Published as No. 519, Columbia Studies in History, Economics and Public Law.)

Theses Completed and Accepted

CLIFFORD ANDREW CARROLL, S.J., B.A., Gonzaga, 1933; M.A., 1934. Competition in the restaurant business in Seattle, Washington. 1947. *St. Louis.*

RICHARD B. TENNANT, B.A., Yale, 1937. The American cigarette industry, 1927–1938; an analysis of market behaviour. *Yale.*

Theses in Preparation

FRANCIS A. BABIONE, B.S., Miami, 1931; M.B.A., Ohio State, 1932. The leasing of industrial equipment. 1947. *Ohio State.*

WINN FINNER, B.S., Wisconsin, 1934; M.S., 1935. The dry skim milk industry and marketing agreement. 1947. *Wisconsin.*

MORRIS FORKOSCH, LL.B., St. John's 1930; LL.M., 1932; B.A., New York, 1936; M.A., 1938. The liquor industry. 1947. *New York.*

CHARLES H. HESSION, B.A., College of City of New York, 1932; M.A., Columbia, 1933. The economics of the food container industry. 1947. *Columbia.*

RIDGEWAY HOEGSTEDT, B.A., California, 1929; M.A., 1933. Cost of production and price policy. 1947. *Columbia.*

HARRIET JANE HOLMES, B.A., Vassar, 1938; M.A., Radcliffe, 1945. Financial aspects of the Massachusetts woolen industry. *Harvard.*

VEN-TAI HSU, B.S., Fuh-Tan University, 1926; LL.B., Shanghai College of Law, 1933; M.A., New York, 1937. Economics of sheetglass industry. 1947. *New York.*

EVAN OWEN ROBERTS, B.A., Wisconsin, 1929; M.A., 1938. Modern industrial purchasing: its practice and economic implications. 1946. *Wisconsin.*

KENNETH M. SPANG, B.A., Dartmouth, 1933; M.A., Columbia, 1936. Price making in the New York milk shed. 1947. *Columbia.*

VIRGINIA GALBRAITH TAUCHAR, B.A., California, 1941. The implications of war activity on technological productivity and economic progress. 1948. *California.*

STANLEY SZU-YEE TSOU, B.S., California; M.A., Harvard, 1946. The world tea industry and China. *Harvard.*

HAROLD GOODHUE VATTER, B.A., Wisconsin, 1936; M.A., Columbia, 1938. The changing position of small enterprise. 1948. *California.*

Marketing; Domestic Trade

Degree Conferred

RICHARD L. D. MORSE, Ph.D., Iowa State, 1946. Egg grading and consumers' preferences with special reference to Iowa egg marketing.

Theses in Preparation

RICHARD MELTON ALT, B.A., Harvard, 1932; M.A., 1940. Department store price policies. 1946. *Harvard.*

R. G. BRESSLER, JR., M.S., Connecticut, 1936. Efficiency of milk distribution. 1946. *Harvard.*

CARL CLARK, B.S., Oklahoma Agricultural and Mechanical, 1928; M.S., 1929. The marketing of tobacco through the loose leaf auction system. 1947. *Wisconsin.*

JAMES S. CROSS, B.A. and M.A., Pennsylvania State, 1940. A study of the mercantile credit structure and its function as purchasing power. 1947. *Ohio State.*

JAMES H. DAVIS, B.S., Missouri, 1938; M.B.A., Ohio State, 1940. An analysis of the job of the service wholesale drug salesmen. 1947. *Ohio State.*

ALBERT FISHER, B.A., Oberlin, 1939; M.B.A., Ohio State, 1940. Wholesale drug warehouse layout and order handling procedures. 1947. *Ohio State.*

HAROLD E. HARDY, B.A., Pomona, 1925. The integration of manufacturing and chain-store distribution. 1946. *Minnesota.*

LELAND ELMER HESS, B.A., Ripon, 1938; M.A., Chicago, 1940. Mail order business. 1946. *Chicago.*

ROY WILLIAM JASTRAM, B.A., Stanford, 1936. Some economic aspects of large scale advertising. 1946. *Stanford.*

ISRAEL RAY KOSLOFF, B.A., Chicago, 1943; M.A., 1945. Gasoline marketing in Minnesota. 1946. *Chicago.*

LEWIS F. MANHART, B.S., Bowling Green State, 1929; M.A., Ohio State, 1936. Department store credit management—a case study of the La Salle and Koch Company, Toledo, Ohio. 1947. *Ohio State.*

F. BYERS MILLER, B.S., Baldwin Wallace, 1934; M.B.A., Ohio State, 1940. Marketing of prescription ware. 1947. *Ohio State.*

SCHUYLER F. OTTESON, Ph.B., Wisconsin, 1939; M.B.A., Northwestern, 1940. Market research techniques. 1947. *Ohio State.*

RALPH W. SHERMAN, B.S., Ohio State, 1929; M.S., 1932. Development of the cold storage locker industry in Ohio. 1947. *Ohio State.*

FREDERICK W. SHORT, B.A., MacMasters, 1943; M.S., Minnesota, 1944. Marketing of fruit with special reference to the Niagara peninsula. 1947. *Minnesota.*

MINNIE B. TRACEY, B.A., Michigan, 1924; M.S., Denver, 1935. The marketing of frozen food products. 1947. *Ohio State.*

ROBERT W. TWYMAN, B.A., Indiana, 1940; M.A., Chicago, 1942. A history of Marshall Field and Company. 1946. *Chicago.*

FRANCIS A. WINGATE, B.A., Bowdoin, 1931; M.B.A., Harvard, 1933. Principles and methods of price determination in retailing. 1948. *Ohio State.*

Mining; Manufacturing; Construction

Thesis Completed and Accepted

HAROLD GREGG LEWIS, B.A., Chicago, 1936. Studies in the elasticity of demand for steel. 1946. *Chicago.*

Theses in Preparation

ARTHUR AARON BRIGHT, JR., B.A., Dartmouth, 1939; C.S.M., 1940; M.A., Chicago, 1942. Technological change and the electric lamp industry. 1946. *Chicago.*

WILLIAM BYRAM GATES, JR., B.A., Williams, 1939. An economic history of the Michigan copper mining industry. 1946. *Chicago.*

ROBERT GROSSE, B.A., 1944, Columbia; M.A., 1946, Harvard. Determinants of size of firms in iron and steel industry 1790. *Harvard.*

GEORGE HENRY HOBART, B.A., Michigan, 1908; M.A., North Carolina, 1941. The pottery industry in the United States. 1947. *North Carolina.*

MARTHA CRAMPTON HOWARD, B.A., Goucher, 1934; M.A., Radcliffe, 1936. History of the margarine industry. 1948. *Columbia.*

HAROLD EMERSON KLONTZ, B.A., Berea, 1935. The furniture industry in the South. 1947. *North Carolina.*

MILTON LIPTON, B.A., Rutgers, 1939. Statistical analysis of construction activity in San Francisco, 1906–1946. 1947. *Stanford.*

OSCAR WARREN MAIN, B.A., McMaster, 1938; M.A., Toronto, 1945. The steel industry of Canada. *Toronto.*

DON PATINKIN, B.A., Chicago, 1943; M.A., 1945. Models of manufacturing in the United States. 1947. *Chicago.*

MAYNARD A. PECK, B.A., Bethany, 1930; M.A., Nebraska, 1934. Some economic aspects of the coal industry in Boulder county, Colorado. 1947. *Colorado.*

SAMI SEMSIDDIN TEKINER, M.A., Cornell, 1941. An econometric study of employment, investment and output in United States manufacturing, 1920–41. 1946. *Chicago.*

DANIEL CARLSON VANDERMEULEN, B.A., Hamilton, 1936; M.A., Harvard, 1946. Technological change in the paper industry—introduction of the sulphate process. 1946. *Harvard.*

Transportation; Communication; Public Utilities

Degrees Conferred

DAVID W. BUSSELL, Ph.D., Ohio State, 1946. Truck transportation of liquid petroleum products in bulk.

MERRILL DEVOE, Ph.D., Ohio State, 1946. Business and economic problems of the local radio station.

JACOB MARTIN GOULD, Ph.D., Columbia, 1946. Output and productivity in electric and gas utilities, 1899–1942.

JAMES GARNETT LYNE, Ph.D., New York, 1946. The need of the railways for additional fixed-plant capital and possible means of its attainment.

CHANGNI YOUNG, Ph.D., Harvard, 1946. The Market Street railway system in San Francisco.

Theses in Preparation

PAUL LAURELL AMBELANG, B.A., Illinois, 1928; M.A., Catholic, 1942. A history of employment on railways of the United States to 1945. *Catholic.*

MARY RAY BURNS, B.A., Minnesota, 1916. A comparative study of four recent railroad reorganizations: Great Western, Milwaukee, North Western and Soo Line. 1947. *Minnesota.*

JOHN P. CARTER, B.A., Columbia, 1936. Transportation rates and their relation to the location of production. 1947. *California.*

JAMES EDMOND COLLINS, B.A., Syracuse, 1940. Cost conditions in air transportation. 1947. *Stanford.*

HYMAN HOWARD GOLDIN, B.A., 1936, Harvard; M.A., 1946. Western Union, the biography of a public utility. *Harvard.*

JAY GORDON HALL, B.A., Western Ontario, 1934; M.A., Chicago, 1944. A history of the automobile and of new highways in Latin America. 1946. *Chicago.*

PAUL L. HOWELL, B.B.A., Washington, 1931; M.A., Harvard, 1942. Federal regulation of utility finance. 1947. *Harvard.*

EDWIN HUGHES, B.A., Williams, 1919; M.A., 1934. The St. Paul organization. 1947. *Columbia.*

EDWARD WATSON, B.A., Princeton, 1936; M.A., Harvard, 1941. Railroad reorganization. 1947. *Harvard.*

Agriculture; Forestry; Fisheries

Degrees Conferred

RALEIGH BARLOWE, Ph.D., Wisconsin, 1946. The Wisconsin forest crop law: an appraisal and evaluation.

JAMES REGINALD BOWRING, Ph.D., Iowa State, 1945. Nutritional problems in relation to agriculture in Canada.

PEI-KANG CHANG, Ph.D., Harvard, 1946. Agriculture and industrialization: an inquiry into the adjustments between agriculture and industry in the process of industrialization.

WILLIAM HALDO FISHER, Ph.D., Virginia, 1946. An economic investigation of the dairy industry in the Fifth Federal Reserve District. (Published by the Federal Reserve Bank of Richmond, Virginia.)

ARTHUR THEODORE MOSHER, Ph.D., Chicago, 1946. The economic effects of Hindu religion and social traditions on agricultural production by Christians in North India.

MORGAN COLUMBUS ROCHESTER, Ph.D., Wisconsin, 1946. Landlord-tenant relationships in the share-cropper system in South Carolina.

LEONARD A. SALTER, JR., Ph.D., *post obitum*, Minnesota, 1946. A critical review of research in land economics.

BEN H. THIBODEAUX, Ph.D., Harvard, 1946. An economic study of agriculture in Bolivia.

JOHN FRANCIS TIMMONS, Ph.D., Wisconsin, 1946. Economic and social aspects of the devalua tion of agricultural land through inheritance, gift and will.

ELIOT OTTO WAPLES, Ph.D., Wisconsin, 1946. Farm ownership processes in a low tenancy area: a study of the use and distribution of family capital to achieve owner-operatorship and retirement security.

RAMEY C. WHITNEY, Ph.D., Minnesota, 1946. Farm income, investment and value of farm land in Missouri.

Thesis Completed and Accepted

CHARLES FELDER REYNOLDS, JR., B.S., Mississippi State, 1939; M.A., Virginia, 1942. Changes in the agricultural economy of the Yazoo-Mississippi delta. 1946. *Virginia.*

Theses in Preparation

GORDON L. BURTON, B.A., Alberta, 1937; M.A., 1940. Economic elements of a price policy for Canadian agriculture. 1946. *Iowa State.*

GERALD ENGELMAN, B.S., Iowa State, 1937. Problems involved in the sale of slaughter livestock on the basis of carcass weight and grade. 1947. *Minnesota.*

GRADY BLUHM GROWE, B.S., Georgia, 1939. Interregional competition in peanut production. 1947. *Virginia.*

R. C. HEADINGTON, B.A., Kenyon, 1937; M.Sc., Ohio State, 1938. Keeping the farm in the family. 1948. *Ohio State.*

CLIFFORD G. HILDRETH, B.A., Kansas, 1939; M.S., Iowa State, 1941. Production functions for Iowa agriculture. 1947. *Iowa State.*

HASTINGS DUDLEY HUGGINS, M.S., Cornell, 1933; M.A., Harvard, 1946. Initiation and organization of economic research program in British Guiana. *Harvard.*

HERMAN BROOKS JAMES, B.S., North Carolina State, 1932; M.S., 1940. Mechanization problems in eastern North Carolina agriculture. 1947. *Duke.*

JAMES WILEY KNOWLES, B.S.S., College of City of New York, 1936. Economic criteria in the design and evaluation of farm policy. 1947. *Columbia.*

IVAN M. LEE, B.S., Iowa State, 1941. Economic implications of the mobility of the human resource in agriculture. 1947. *Iowa State.*

JAMES H. LORIE, B.A., Cornell, 1942; M.A., 1945. The relationship by regions between feed production and consumption and livestock production in the United States. 1946. *Chicago.*

JAMES E. MCNULTY, JR., B.A., Harvard, 1944; M.A., 1945. The relation of agricultural credit and land tenure in American agriculture. 1946. *Harvard.*

WILLIAM LIDDON MCPETERS, B.A., Vanderbilt, 1943; M.A., Harvard, 1945. Role of credit in the improvement and conversion of southern agriculture. 1947. *Harvard.*

DELBERT C. MYRICK, B.S., Montana State, 1936. County agricultural planning, Hand County, South Dakota. 1946. *Harvard.*

WEBER PETERSON, B.S., Montana State, 1936; M.S., 1938. Economics of flaxseed production in the United States. 1947. *Minnesota.*

RICHARD POWERS, B.S., Virginia, 1944; M.A., 1945. American farm policy: 1938–1945. 1947. *Virginia.*

LEONARD H. SCHOFF, B.A., Harvard, 1904; M.A., 1905. One farm or two: a statistical survey of the requirements of mechanized farming. 1946. *Columbia.*

RICHARD SIELAFF, M.S., Minnesota, 1944. Competition of agricultural fibers. 1947. *Minnesota.*

SOLOMON SINCLAIR, B.S.A., Saskatchewan, 1932; M.S., 1937. The role of subsidies in farm credit. 1947. *Minnesota.*

GEORGE E. TOBEN, B.S., Illinois, 1936; M.S., 1938. An analysis of machinery costs on farms in southeastern Minnesota. 1947. *Minnesota.*

CHIEH TSIANG, M.S., Minnesota, 1946. An economic study of some problems of Chinese agriculture. 1947. *Minnesota.*

Economic Geography; Regional Planning; Urban Land; Housing

Degree Conferred

MALCOLM CARTER MCFARLAND, Ph.D., Georgetown, 1946. An economic analysis of Title I of the National Housing Act.

Thesis Completed and Accepted

ARMAND PETER RUDERMAN, B.S., Harvard, 1943; M.B.A., Chicago, 1944; M.A., Harvard, 1946. A study of American low-cost housing problems with special emphasis on rural areas. *Harvard.*

Theses in Preparation

WILLIAM PAUL BRANN, B.A., Arkansas State, 1938; M.A., Virginia, 1942. The relation of agriculture to industry in Arkansas. 1946. *Virginia.*

LEWIS EDWARD KNOLLMEYER, B.A., Yale, 1930; M.A., Wisconsin, 1939. Housing as an outlet for investment. 1946. *Wisconsin.*

WILLIAM EDWARD MANN, B.A., Toronto, 1942; M.A., 1943. The Carrot River community. *Toronto.*

LEONARD SOLOMN SILK, B.A., Wisconsin, 1940. Swedish housing planning. 1947. *Duke.*

Labor and Industrial Relations

Degrees Conferred

DANIEL JOSEPH AHEARN, Ph.D., Columbia, 1945. The wages of farm and factory. (Published as No. 518, The Columbia Studies in History, Economics, and Public Law.)

GORDON FALK BLOOM, Ph.D., Harvard, 1946. Unions and technological progress.

GEORGE HENRY HAINES, Ph.D., Clark, 1946. History of the Virginia State Federation of Labor, 1895–1944.

LANGSTON THACKER HAWLEY, Ph.D., North Carolina, 1946. An analysis of wage standardization.

CHARLES EDWARD LINDBLOM, Ph.D., Chicago, 1945. Some aspects of the interrelationships between labor unions and the competitive price system.

WILLIAM JOHN PHILLIPS, JR., Ph.D., New York, 1946. A theory of union growth.

SISTER MARY YOLANDE SCHULTE, O.S.F., Ph.D., Catholic, 1945. Wage theories in the fair labor standards act. (Published by Catholic University of America Press.)

VIOLA WYCKOFF, Ph.D., Columbia, 1946. The public works wage rate and some of its economic effects. (Published as No. 521 in the Columbia Studies in History, Economics, and Public Law.)

Theses Completed and Accepted

RUTH G. GILBERT, B.A., Wooster, 1943. An analysis of the scope of private industrial arbitration. 1946. *Massachusetts Institute of Technology.*

EDITHA HADCOCK, B.A., Mt. Holyoke, 1927; M.A., Brown, 1931. Labor problems in the Rhode Island cotton mills from 1790 to 1940. *Brown.*

FINN THEODORE MALM, B.S., California, 1941. A case study in industrial unionism. 1946. *Massachusetts Institute of Technology.*

Theses in Preparation

ROBERT J. ALEXANDER, B.A., Columbia, 1940; M.A., 1941. Collective bargaining in Chile. 1948. *Columbia.*

ARTHUR GARWOOD ASHBROOK, JR., B.S., Haverford, 1941. A federal labor policy consistent with full employment. 1947. *Massachusetts Institute of Technology.*

ROBERT SCOTT BOWERS, B.A., Kansas Wesleyan, 1933; M.A., American, 1938. The labor policies of the National Association of Manufacturers. 1947. *Wisconsin.*

PAUL BRINKER, B.A., Pennsylvania State, 1939; M.A., 1940. The National Labor Relations Act—a study of the Act and its enforcement with particular reference to the work of the 10th region's office in Atlanta. 1947. *Vermont.*

HENRY THEODORE BUECHEL, B.A., Washington State, 1929; M.A., 1937. Compulsory arbitration in Australia. *Wisconsin.*

JEROME B. COHEN, B.S.S., College of City of New York, 1934; M.A., Columbia, 1935. Concept of unemployment. 1947. *Columbia.*

DORIS DUFFY, B.A., Notre Dame of Maryland, 1939; M.A., Catholic, 1940. The role of government in labor-management production committees. *Catholic.*

ENNIS KINGMAN EBERHART, B.A., Simpson, 1928; M.A., Columbia, 1929. The job opportunities of racial minorities in America. 1947. *Wisconsin.*

REV. WILLIAM JOSEPH GORDON, O.S.A., B.A., Villanova, 1941; M.A., Catholic, 1944. Some state labor relations acts in operation. 1946. *Catholic.*

HERBERT GERHARD HENEMAN, B.B.A., Minnesota, 1938; M.A., 1943. Family participation in the labor force. 1947. *Minnesota.*

THOMAS ELFRED HOGAN, B.A., Washington, 1938; M.A., 1940. The wage policy of the National War Labor Board. 1947. *Wisconsin.*

JOHN JEUCK, B.A., Chicago, 1937; M.B.A., 1938. Profit sharing: a case study of Sears Roebuck and Company. 1946. *Chicago.*

CHARLES CLINTON KILLINGSWORTH, B.A., Southwest Missouri State, 1938; M.A., Oklahoma Agricultural and Mechanical, 1939. State labor relations legislation. 1946. *Wisconsin.*

WILLIAM HENRY KNOWLES, B.S., Iowa State, 1940; Ph.M., Wisconsin, 1942. Labor and efficiency—the newer phase. 1947. *Wisconsin.*

JUANITA MORRIS KREPS, B.A., Berea, 1942; M.A., Duke, 1944. The history and analysis of organized labor's legislative and political activities, 1930–1946. 1947. *Duke.*

DAVID LEVINSON, B.A., Scranton, 1942; M.A., Syracuse, 1943. The unionization of supervisory and technical employees. 1947. *Wisconsin.*

THOMAS JOSEPH MCDONAGH, C.S.C., Ph.B., Gregorian, Rome, 1939; M.A., Wisconsin, 1945. The Catholic social viewpoint in the labor movement. 1947. *Wisconsin.*

ARTHUR E. MACE, JR., B.A., Amherst, 1938. Economics of wage differentials. 1947. *Chicago.*

MARTHA JANE MARSHALL, B.A., Chicago, 1939; M.A., 1945. Guaranteed annual wages. 1947. *Chicago.*

JOHN F. MEE, B.A., Miami, 1930; M.A., Maine, 1933. Contributions of personnel developments in the ATC to the science of personnel management. 1947. *Ohio State.*

THOMAS EDWARD POSEY, B.A., Syracuse, 1923; M.A., 1925. The history of the labor movement of West Virginia. 1947. *Wisconsin.*

ROBERT WHITE PULLEN, B.A., Colby, 1941. The effects on collective bargaining of unfair labor practice cases under the Wagner Act. 1947. *Massachusetts Institute of Technology.*

REV. CHARLES B. QUIRK, B.A., Providence, 1930; M.A., Catholic, 1944. The origin and development of the U. S. Employment Service in Rhode Island. 1947. *Columbia.*

DWIGHT E. ROBINSON, B.A., Yale, 1936; B.A., Oxford, 1941. The managerial prerogative. 1948. *Columbia.*

MAE KATZEN SALZER, B.A., Brooklyn, 1934; M.A., Columbia, 1935. The hours question. 1947. *Columbia.*

MYRNA SIEGENDORF, B.A., New Jersey College for Women, 1939; M.A., Wisconsin, 1940. The Montgomery Ward case; microcosm of industrial conflict. 1946. *Wisconsin.*

DAVID KENNETH SPIEGEL, B.S., New York, 1939; M.A., 1940. The administration of minimum wage legislation. 1947. *New York.*

BENJAMIN SOLOMON STEPHANSKY, B.A., Wisconsin, 1939; M.A., 1942. The effect of government agencies on the internal processes of the labor movement. 1947. *Wisconsin.*

ROBERT TANNENBAUM, B.A., Chicago, 1937; M.B.A., 1938. The area of managerial discretion —with reference to selected management-union problems. 1946. *Chicago.*

JOHN GUDERT TURNBULL, B.A., Denison, 1938. Management, labor and the concept of control: a study of management functions and union policies. 1947. *Massachusetts Institute of Technology.*

VIDKUUN EUGEN ULRIKSSON, B.S., Minnesota, 1937; M.A., 1943. The history of the labor relations of the American commercial telegraph industry. 1947. *Wisconsin.*

LEO WEITZ, B.S.S., College of City of New York, 1928; M.A., Columbia, 1932. The role of the intellectuals in the American labor movement, 1865–1944. 1947. *Columbia.*

FRED WITNEY, M.A., Illinois, 1941. Wartime experiences of the National Labor Relations Board, 1941–45. *Illinois.*

HUGH EDWIN YOUNG, B.S., Maine, 1940; M.A., 1942. The role of leadership in American labor history. 1947. *Wisconsin.*

Social Insurance; Relief; Pensions; Public Welfare

Degrees Awarded

HELEN ELIZABETH MARTZ, Ph.D., Bryn Mawr, 1946. Use of County Boards in the administration of public assistance: a case study of County Board administration of assistance.

CHRISTINE NEWARK, Ph.D., Iowa State, 1945. Certain medical and allied health services with special application to rural communities in Iowa.

DANIEL SCHEINMAN, Ph.D., Chicago, 1945. Central *versus* local responsibility for unemployment relief.

Theses in Preparation

LOUIS HOFFER, B.A., College of City of New York, 1930; M.A., Columbia, 1932. Unemployment compensation and seasonal variations in employment in New York State. 1947. *New York.*

ELIZABETH HARWELL JACKSON, B.A., Swarthmore; M.A., Harvard, 1945. Unemployment and disability in Puerto Rico. *Harvard.*

GEORGE MASON KEITH, B.A., Wisconsin, 1924; M.A., 1931. Economics of old age assistance as exemplified by the experience in Wisconsin. 1947. *Wisconsin.*

ARTHUR HALLAM REEDE, B.A., Pennsylvania State, 1931; M.A., 1932. The Italian system of family allowance. 1947. *Columbia.*

ISIDORE SINGER, B.S., College of City of New York, 1940; M.A., Brooklyn, 1942. The social insurance system of Mexico. 1947. *New York.*

Consumption; Coöperation

Theses in Preparation

DONALD ALBERT SCHWARTZ, B.S., Minnesota State Teachers, 1933; Ph.M., Wisconsin, 1943. Consumers' cooperatives in the evolving economic structure of America. 1946. *Wisconsin.*

HENRY HOLDSHIP WARE, B.A., Pomona, 1932; M.A., Columbia, 1929. The Soviet consumer; a theoretical approach to the problem of consumer satisfaction under the Soviet set-up. 1947. *Columbia.*

Population; Migration; Vital Statistics

Degree Conferred

EDWARD BUCHANAN WILLIAMS, Ph.D., Columbia, 1946. Negro migration in four selected counties of the southeastern region of the United States.

Thesis in Preparation

THOMAS MURPHY, B.S., New York, 1934; M.A., 1937. Cycles in diseases. 1947. *New York.*

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief descriptions of vacancies announced and of applications made. It is optional with those submitting such announcements to publish name and address or to use a key number.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Motor transportation, industrial development, finance: Collegiate institute of technology desires applications from men under 35 with college teaching experience in transportation and finance. Position is 12 months a year. P115

Opening in economics in junior college: Man; under 35, Ph.D. preferred; minor work in related social sciences; experience desirable; around $3,000 per 37 weeks; 2-year guarantee, with promise of permanent tenure for right man and maximum salary of $4,150 after eight years of service. Write to P. Masiko, 6020 West Addison Street, Chicago 34, Illinois.

Teachers Available

Elementary economics, South American economy, postwar problems, cartels and corporations: Doctor of Law and Economics. Author of various books and opinions; member and honorary member of scientific societies; lecturing experience in the United States and abroad. Desires teaching or research position in or near New York or Washington; also part-time or advisory work or summer lecture work at a university. E195

Economic history, money and banking, world economy: Man, 53, Ph.D., University of Berlin. American citizen. Widely traveled. Experience in international trade and the German agricultural co-operative movement. Since coming to this country, 7 years of college teaching (5 years at a denominational university). For last 3 years in government service as economic analyst with the regional office of a "long-term" agency. Author of several books (two or which were published in America) and numerous papers. Extensive research on American banking history near completion. Expects to leave government service in 1946 and desires adequate teaching appointment. E213

Labor problems, industrial relations, economic history, general economics: Man, 31, M.A., completing Ph.D., Columbia University. Three years of Army statistical control work. Available immediately. E214

International trade and finance, commercial policy, inter-American relations, money and banking, economic theory: Man, 42, married, Ph.D., University of Wisconsin. Eleven years of college teaching in economics; publications; presently in government but desires to return to university or college teaching. Available in September, 1946. E218

Theory, money and banking, public control of business, postwar problems: Man, 53, married, Doctor of Law and Political Science, University of Vienna. More than 5 years of economics teaching at a New York college; publications; 20 years of European experience as bank executive, writer on government economic policy, and economics teacher. Desires university or college position. Available immediately. E220

Theory, public finance, public control of business, agricultural economics, business cycles: Man, 29, B.A., 1941, M.A., 1945. Five years of government research experience in analysis of major trends; 1 semester of teaching experience; publications. Desires teaching or research position. Available in September, 1946. E224

John R Commons

For biographical data, see obituary notice, pages 782-786 in the September, 1945, issue of the *American Economic Review.*

Number 19 of a series of photographs of past presidents of the Association.

NOTE: The photographs of I. L. Sharfman, Walter F. Willcox, and T. N. Carver vere incorrectly numbered. They should have been numbers 47, 17, and 18, respectively.

// The American Economic Review

VOLUME XXXVI DECEMBER, 1946 NUMBER FIVE

THE CHANGING SIGNIFICANCE OF THE INTEREST RATE

By HENRY C. WALLICH*

The growth of the public debt is bringing to a head a trend which has been under way since the early thirties: the weakening of the rate of interest, both in practice and in economic theory, as an instrument for cyclical control of business activity. At the same time, the debt is giving new importance to the interest rate as a factor influencing the distribution of national income, the income of certain groups, and the value of capital assets. In this paper it will be argued that what we have been witnessing is in fact a shift in the main functions of the interest rate. If this be true, we shall have to reorient our thinking, so as to pay less attention to credit stimulation or restriction, by means of low or high rates, and more to the influences of such rates upon the incomes of interest receivers and interest payers and their capital position. In concrete questions of public debt management, the new viewpoint is already becoming apparent. Economic theory, which frequently is running one lap behind practice, may do well to catch up.

Most of the facts and arguments entering into the matter are well known. To this extent, the task of this paper will mainly be to add them up to a conclusion. I shall make an effort to stress the newer positive functions of interest, in order to counter the belief prevalent in some circles that the interest rate as a policy instrument is altogether a has-been. In conclusion, I shall endeavor to appraise the current debate for and against low rates in the light of their changing significance.

I. *The Great Disillusionment*

Few people today would deny that the stature to which monetary economists in the past built up the interest rate as an instrument of economic control was greatly exaggerated. Idealizing the fair weather experience of the Bank of England before 1914, many of them allowed themselves to be seduced by the analytical elegance of the instrument,

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probably without having a very realistic appreciation of what really had made bank policy work. For, despite a fairly widespread faith in the effectiveness of the instrument, there was no unanimity as to its *modus operandi*. Was it chiefly through its effect upon the cost of short-term accommodation, or that of long-term investment, or through its impact upon the balance of payments, or perhaps through some other factor? Each group of interest policy enthusiasts was able to bring strong arguments against the beliefs of rival groups. Mr. Hawtrey trying to disprove Mr. Keynes's faith in the long-term rate was only a shade less convincing than Mr. Keynes in disproving Mr. Hawtrey on the short-term rate. Despite these doubts, economists worked out bewildering patterns of interest policies, with varying spreads of rates and subtle variations therein, preannounced and not preannounced, which, in the words of one observer, were more apt to give business men a nervous breakdown than to guide their investment decisions.

Interest in monetary control as an anticyclical weapon was at its height around 1930. Then came a decade of curiously conflicting experiences. In the United States, interest rates declined to very low levels without succeeding in arresting the collapse of the early thirties or in restoring normal activity later on. It was, as Professor Hansen has pointed out, something in the nature of a laboratory test, with very discouraging conclusions for monetary policy. In Great Britain, on the other hand, a more moderate decline in rates was succeeded by a considerable pickup in investment activity. No doubt this could be explained in a variety of ways independently of interest levels. It was believed, nevertheless, that at least the famous British housing boom of the middle thirties was strongly influenced by low interest rates. British experience, therefore, appears to have been less at variance with the hopes of the twenties than American.

This may explain why Keynes continued to regard the interest rate as a major investment factor,[1] although his way of looking at it changed considerably between the *Treatise* of 1930 and the *General Theory* of 1936. In the later book, the rate of interest ceased to be the willing servant of the monetary authorities and became instead something like a malevolent genie, whose refusal to shrink at their bidding tended to hold back investment. Monetary policy became a one-way affair, to be employed aggressively only when lagging investment called for lower rates. The deliberate raising of rates to curb an occasional boom was to be avoided "like hell-fire" because the rate could not be brought down fast enough in the succeeding depression.

Toward the end of the thirties, a few economists, in search of a new approach to the question of interest costs, did something which to

[1] "An Open Letter to President Roosevelt," *New York Times* (Dec. 31, 1933).

strict theorists must have looked almost like hitting below the belt: they asked business men about it. The reply was, by and large, that interest was a minor element in costs and certainly very far from playing a decisive rôle in investment decisions.[2] Under the combined onslaught of adverse experience, critical analysis, and factual inquiries, the defenders of the interest rate were forced to retire into the relatively unexplored territory of very long-term investment, such as utilities and housing. Even there, however, their position remained insecure, because it was pointed out that over very long investment periods uncertainty tended to become so great as to obscure neat profit calculations based on money costs.[3]

Today the inflationary pressure prevailing in this country, which stems both from the physical consequences of the war and from the manner of its financing, has once more turned our eyes toward interest policy as a means of boom control. The debate has been lively, but for practical purposes the conclusion seems inevitable that in this direction, too, the potentialities of monetary policy have become very limited. Obstacles which stand in the way of really effective monetary boom control have frequently been analyzed; today such obstacles are more numerous and less surmountable than ever, owing to the situation created by our public debt. A particularly effective statement of the case is that by Professor Seltzer in his article "Is a Rise in Interest Rates Desirable or Necessary?" in a recent issue of the *American Economic Review*.[4] Briefly, the conclusion is that a mild rise in interest rates would probably do little to restrain expansion, and by a very severe tightening of credit might overshoot the mark and perhaps throw us into a downward spiral, while also producing serious repercussions in other directions. Thus, both as an anti-depression and an anti-inflation device, traditional interest policy appears to be stymied.

The weakening of the case for cyclical interest rate policy leaves, however, the possibility of a secular approach. If interest rates are not strong enough to control booms and depressions, they may nevertheless be sufficiently powerful to affect the general trend. If, in the long run, stagnation is more likely than inflation, low interest rates may go at least part of the way in combating this tendency. This, I believe, is

[2] *Cf.* J. E. Meade and P. W. S. Andrews, "Summary of Replies to Questions on Effect of Interest Rates," *Oxford Econ. Papers*, No. I (Oct., 1938), pp. 14–31; J. F. Ebersole, "The Influence of Interest Rates Upon Entrepreneurial Decisions in Business," *Harvard Bus. Rev.*, Vol. XVII, No. 1 (Autumn, 1938), pp. 35–39.

[3] J. R. Hicks, *Value and Capital* (Oxford, 1939), pp. 225–226.

[4] Vol. XXXV, No. 5 (Dec., 1945), pp. 831–850. Also see Alvin H. Hansen, "Stability and Expansion," in *Financing American Prosperity* (New York, Twentieth Century Fund, 1945), pp. 250-255, and my article, "Debt Management as an Instrument of Economic Policy," *Amer. Econ. Rev.*, Vol. XXXVI, No. 3 (June, 1946), pp. 292–310.

the main economic argument employed by the public debt authorities in defense of their low interest policy, the emphasis on budgetary savings being resorted to more for its political appeal.

There is disagreement, of course, regarding the major premise of the case —do we really face a secular stagnation trend? A majority of economists, however, if pressed, would perhaps subscribe to the view that stagnation is more likely than overactivity, if one or the other extreme is to prevail. But then a second issue remains to be raised: If rates are permanently low, will they have the same stimulating potential as *falling* rates? Or is the effect of lowered rates likely to be strong at first and diminishing later on? On the degree to which low rates retain their stimulating potential depends their value as a long-run weapon.

A high rate, in so far as it has any investment effects, prevents the making of certain investments. But what happens to these unfulfilled investment opportunities? Are they lost forever, or will they gradually become feasible even at the higher rate, through technological progress, internal capital accumulation, rising demand? Whenever investment opportunities are of the latter type, a lowering of rates will merely advance the day of their realization but will not add to the total. There would be an immediate bunching of investments, but soon this would slow down to the old pace, much as in the case of a shift to the pay-as-you-go income tax. On the other hand, where investment opportunities do not gradually tend to move up into the "feasible" category, they will be lost unless rates are lowered. In that case a lowering of interest rates will bring an enduring increase in the amount of investment per unit of time.

One can easily visualize investment opportunities of both types. Which of the two is more frequent would be hard to say. But I suspect that those which eventually are realized in any case are sufficiently numerous to put a considerable dent into the case for permanently low rates as an investment stimulant.

If the effectiveness of lower interest rates diminishes with time, the timing of the operation becomes important. Lower rates would have to be regarded as ammunition not to be wasted prematurely. It seems, therefore, that a policy of lowering rates now would not only aggravate needlessly the existing inflationary trend, but might also impair their effectiveness later on.

We may conclude that, on the whole, the case for permanently low long-term rates has merits, if we are willing to regard stagnation as our primary long-run danger. These merits, however, can easily be overstated and a further rate reduction now might defeat its own longer-run purposes.

II. *The Availability of Money*

While the interest rate was slowly deglamorized, another train of thought was being pursued which centered on the availability of money, in contrast to its cost. It seemed as if the arguments serving to minimize the weight of interest costs in business decisions were proving too much. If they contained the whole truth, the wonder was not that the monetary policy had worked poorly, but that it had worked at all. Observation of the practices of bankers and security underwriters confirmed the suspicion that the price of money was by no means the only factor determining its supply. On the contrary, it became apparent that deliberate rationing, risk elements, and plain deficiency of organization interfered so much with the "perfection" of the market that the interest rate might be regarded more as a *symptom* of the availability of money than as the truly causal factor regulating supply and demand.[5]

This trend of thought deserves to be pursued a little further. For while it is in a sense destructive of traditional interest rate theorizing, it also throws light upon some new approaches to monetary policy. We shall survey the factors which limit the availability of money under the three headings already mentioned: (1) rationing, (2) risk, and (3) deficient organization. Each one plays a distinctive rôle in the credit picture which may often outweigh that of the interest rate.

A. *Rationing.* In the good old days of discount policy, it was often observed that a raising or lowering of the rate tended to tighten or ease credit more than in proportion to its immediate effects upon the banking position, by virtue of its psychological influence. In the action of the central bank, bankers could read the underlying motives, saw the authorities' appraisal of the business situation, and found indications of future official policy. It was natural that, in anticipation, they should react not only by changing their rates, but also by trying to bring about the desired contraction or expansion by direct action upon loan applications. This propensity would be intensified, in the United States, by the bankers' distaste for remaining in debt to the Federal Reserve. "We're sorry, our funds are fully invested" was a perfectly good answer to a not-too-good client, particularly in the days before the habitual presentation of the borrower's statement, when insistent requests for loans were more apt to cause an unfavorable impression. The same action to expand and curtail loans, *accompanied* by but only in part

[5] *Cf.* Keynes's comments on the "unsatisfied fringe of borrowers" in the *Treatise,* Vol. II, pp. 364–367; J. R. Hicks on the availability of money, in "Mr. Hawtrey on Bank Rate and the Long Term Rate of Interest," *Manchester School,* Vol. X, No. 1 (1939), p. 35; and F. A. Lutz, "The Rate of Interest in a Dynamic Economy," *Amer. Econ. Rev.,* Vol. XXXV, No. 5 (Dec., 1945), pp. 828–829. I am greatly indebted to Mr. H. V. Roelse for his observations on the importance of availability.

effected through changes in rates, would be natural if the banker's own views of business conditions should take a more cheerful or more skeptical turn.

Similar procedures are common in the long-term capital market. Underwriters become more hesitant when they anticipate a drop in security prices, since to see an issue decline sharply soon after its sale is not a pleasant experience for the banker. Thus, the supply of credit can be varied rather substantially by direct action, without the large changes in interest rates which probably would be needed to equate supply and demand.

How far monetary policy owes its effects to its influence over the "rationing" practices of lenders, as contrasted with the pure cost effect of higher or lower interest rates, is of course hard to say. One may suspect, however, that the rationing element is the more important one. To the extent that this is true, one might argue that even today, when interest rate manipulation as such seems to be a less promising means of control than ever, central banks could achieve something by its means if the business community accepted it as an implied official forecast of business conditions. All things considered, however, this, too, seems rather a forlorn hope, for the voices of central bankers today are apt to be only part of a large official chorus, or else crying in the wilderness.

B. *Risk*. A second non-interest factor which greatly influences the availability of credit is risk. All interest rates—except perhaps those paid by a few governments in their own countries—include a premium for credit risk in addition to the liquidity preference premium. Attempts have been made to interpret all and any obstacles to the free flow of credit as due to a risk premium—including failure of would-be borrowers to get any money at all.[6] This, however, appears to be a little strained. A specific recognition of other circumstances which may interfere with the free flow of credit, such as over-all rationing or lack of organization, seems preferable.

The level of the risk rate varies, of course, with the credit of the borrower. Moreover, the premium which the less-than-gilt-edged borrower must pay may take forms other than interest, such as an inconveniently short maturity, or surrender of a share in control. Also, in the case of non-negotiable loans, there may be a subjective element in the risk premium reflecting the familiar principle of increasing risk, *i.e.*, the fact that the lender's apprehensions rise with the proportion of his capital tied up in a single commitment. For large banks, where this aspect is less important, one may suggest that the risk rate, on average, ought to be reflected by the loss ratio over a period of years.

[6] *Cf.* the discussion of this question by Arthur W. Marget, *The Theory of Prices* (New York, 1938), pp. 222–227.

In the case of negotiable loans, holdings can be spread over a sufficiently wide number of people to avoid running into the principle of increasing risk. Here the discount from the yield on governments might be regarded as a measure of the risk rate. It must be added, however, that this allowance may be less than the true risk factor. In the lower grade bonds, the risk of loss is in some measure offset by the possibility of appreciation, if the borrower's credit should prosper. To that extent lower grade bonds partake of the character of equities, whose yield usually does not differ substantially from that of bonds because the much greater risk is balanced by chances of gain.

The following table shows the level of the "pure" interest rate (long-term governments) contrasted with the average yield on bonds carrying A and B ratings, respectively, and the proportion of these yields which is accounted for by the risk rate.

TABLE I.—"PURE" LONG-TERM RATE AND RISK RATES[a]

Year	Long-Term Government Bond Yields[b]	Grade A Corporate Bond Yields[c]	Risk Rate on A Bonds[d]	Grade B Railroad Bond Yields[c]	Risk Rate on B Bonds[d]
1929	3.60	5.28	1.68	7.61	4.01
1932	3.68	7.20	3.52	9.39[e]	5.71
1936	2.65	4.02	1.37	6.60	3.95
1938	2.56	4.22	1.66	9.87	7.31
1945	2.37 (1.66)	2.87	.50 (1.21)	4.47	2.10 (2.81)
Dec. 1945	2.33 (1.51)	2.79	.46 (1.28)	4.23	1.90 (2.72)
Apr. 1946	2.08	2.69	.61	4.22	2.14

[a] Annual average yields except in December, 1945 and April, 1946, when they are monthly averages.

[b] Long-term government bond yields assumed to represent "pure," *i.e.*, riskless rate. This "pure" rate is best represented by the yield of fully taxable long-term government bonds. However, as no fully taxable bonds were issued prior to March, 1941, the yields of partially tax-exempt long-term government bonds had to be used prior to that date. As a result the yields for that period combine with the "pure" interest rate an inseparable element formed by the advantage of partial tax exemption. It is felt, however, that the results are acceptable in principle since the lower tax rates of earlier years make the partial tax exemption relatively unimportant. It should be noted that even the "fully" taxable government bonds are exempt from state taxation. Bracketed figures continue the partially tax-exempt series.

[c] Moody's Grade A corporate bond yields have been used, representing a high-grade, relatively stable series. As no composite corporate series with a rating below Baa exists for the period in question, Standard and Poor's Grade B Railroad bond yields were chosen as typical of a relatively low-grade and volatile series.

[d] Risk-rate: premium paid over and above pure rate.

[e] No composite data exist for 1932 owing to the very small number of issues which paid interest during the year. The yield for December, 1931, was used instead.

Sources: Board of Governors of the Federal Reserve System, Standard and Poor's Current Statistics.

The data indicate, as one would expect, that the risk rate is determined in varying degrees by business conditions and by the level of the

interest rate itself. The lower the grade of the securities, the wider is the fluctuation in the risk rate, to the point where its swings quite outweigh those of the pure rate. And when a low pure rate coincides with good business conditions, as in 1936 and particularly at present, the risk rate is driven down sharply because investors hard pressed for income are forced to take bigger chances in order to get a satisfactory yield.[7]

But the effect of the risk element goes beyond the charge which it imposes upon the borrower. For when it becomes too large, it may altogether prevent the granting of credit. At any time there is a more or less conventional range of rates on loans, negotiable and otherwise, which limits the maximum risk premiums that can be arranged for. Banks and investors usually prefer not to become involved in dubious situations, even if they believe their actuarial risk to be adequately compensated for. At present, for instance, it is hard to think that debentures with a 7 per cent coupon could be marketed, although there are probably enterprises which would be willing to pay such a rate. But if their credit is so poor that such a risk premium would be called for, then they simply cannot get the loan. They may be able to resort to stock financing, or to the sale of convertible senior securities, but in many instances their access to the capital market may be effectively barred.[8] This is particularly apt to happen during depressions. The data of Table I show, for instance, that grade B risks could not possibly have been floated in 1932–34 or in 1938.

This brings us to the following conclusions regarding the effect of risk upon the availability of credit.

1. In so far as risk can be compensated by paying a premium over the pure rate, it results in an additional cost. The considerations which apply are the same which are applicable to pure interest costs, *i.e.*, the risk premium to be paid probably does not weigh heavily in most business decisions.

2. In so far, however, as the risk element prevents financing altogether, or allows it only under very unfavorable conditions, it may constitute a serious obstacle. This is all the more important because of the cyclically perverse fluctuation in risk, which makes it largest when credit expansion is most needed.

3. The tendency of the risk rate to be driven down sharply by a combination of low riskless rates and good business conditions injects an additional element of instability into the economy. Actuarial risks may

[7] The extraordinarily small spread now prevailing between Aaa and A grade bonds, however, is to some extent due to the fact that the former are mostly held down by their call prices and that the latter tend to benefit from this technical situation.

[8] *Cf.* the comment of H. C. Sonne, in a debate with Professor Samuelson, that present low rates tend to cut off smaller firms from long-term credit. "Is the Easy Money Policy a Sound One?" *Modern Industry* (Jan. 15, 1945), pp. 113–126.

be inadequately covered, so that banks as well as institutional and other investors may find themselves in a weak position in the next depression.

C. *Deficient Organization.* The failure of many sectors of the money and capital markets to respond to the easy money policy of the thirties drove home the fact that these markets are not nearly so fluid as sometimes assumed. Hence the profusion of credit agencies created by the federal government during those years in an earnest if not very well-coördinated effort to make money available to neglected and otherwise ill-favored borrowers. That this problem today is far from solved, is shown by the high cost of credit in some small town and rural areas and by the persistent clamor for better capital financing facilities for small business.

D. *Conclusion Regarding Availability.* The foregoing discussion confirms the view that the availability of credit, governed by credit rationing, risk, and organization, is in many respects more important than the interest rate as such. Such successes as monetary policy has scored in the past appear to have been due more to the rationing of credit than to changes in its cost. On the other hand, part of the failures of monetary policy have probably been ascribable to the perverse action of the risk factor and the sluggish response of the remoter sectors of the market. If monetary policy is to be revitalized, therefore, the most promising approach would be, not by way of attempting to "regain control of interest rates," but by obtaining some measure of control over risk factors and over the rationing process, and by improving the market.

This points, of course, in the direction of qualitative controls, in which a number of hesitant steps have already been taken. Guarantees of mortgages through FHA, of certain export credits through the Export-Import Bank, of V loans through the Federal Reserve, of GI loans through the government, and of foreign loans through the International Bank, are attempts to cope with the risk problem. Regulation of down payments for consumer credit and variation of margin requirements for stock exchange loans (regarded by many as little effective), aim at availability from another direction. The creation of official lending agencies, to overcome deficiencies of the market, has already been mentioned. These measures are capable of extension to other fields, and new ones deserving of study have frequently been suggested.[9] By thoroughly exploiting these new approaches, and by coördinating their application, a new form of monetary policy could evolve. This rejuvenated instrument would rely only to a minor degree upon interest rate variations, which would thus quite frankly relinquish their credit control functions and could be employed more effectively to fill the newer rôles which the interest rate is acquiring in our economy.

[9] *Cf.* Alvin H. Hansen, *op. cit.*, pp. 252–255.

III. *The Allocation of Capital*

So far we have been concerned with the increasing impotence of the interest rate as an instrument for controlling over-all investment. Attention remains to be drawn to its likewise increasing deficiency as a selector of investment projects.

Under idealized conditions, the interest rate serves to channel a scarce resource, savings, to the most effective uses. Today, however, this is very questionable. In the first place, this function becomes superfluous in an economy where the supply of savings tends to outrun the demand. As to whether and to what degree this is the case in our present economy, everybody is entitled to his private opinion. In the second place, the interest rate is doing an increasingly poor job in the allocation of capital even under conditions of full employment. Business savings obviously are beyond its control; they tend to be invested, if at all, in ventures similar to those by which they were generated. Moreover, when internal savings are insufficient, established businesses can get outside funds on the strength of their general credit standing, which leaves new firms at an enormous competitive disadvantage. As new business investment has come to be carried out increasingly by old firms, the selectivity of the interest rate has become progressively impaired. Finally, it may be noted that government action has also interfered with the allocation function of the interest rate. Guarantees for certain loans and tax exemption for municipal and state bonds may be mentioned as examples without implying any criticism of this type of interference.

IV. *Interest in the National Income*

In the preceding sections, we have traced the decline—though perhaps not the fall—of the rôle of interest as a regulator of investment. We now come to the positive part of the argument: the increasing importance of interest as a national income factor. This increase is in part a relative one, resulting from the de-emphasis of the interest rate's other and more spectacular functions. In part, however, it is also a more positive phenomenon.

Interest payments and the interest rate have several aspects as income factors. One is the total volume of such payments and its relation to total income. Another is the influence of interest payments upon the distribution of income. A third is the much debated influence of the interest rate upon saving. Fourth, there is the effect upon the capital value of assets which results from a change in rates. These and various others will now be discussed.

A. *The Volume of Interest Payments.* To begin with, we shall study the total volume of interest payments in our economy. Many forms of income which economically have their origin in interest, are not actually

received in that form. Of the return on invested capital, for instance, a part should be regarded as interest, in the light of distribution theory, but in practice this part is hopelessly mixed up with profit, distributed and otherwise. Much the same is true of rent. The problem is complicated by the interest receipts of business, financial and non-financial intermediaries, which often do not pass on this interest in the same form.

On the other hand, there are certain interest receipts by business which are really payment for a service, *i.e.*, for out-of-pocket costs. In the absence of such interest receipts, these businesses would have to make other charges. Services rendered by banks are the most obvious instance. One may reasonably argue that interest receipts covering such services are not economic interest in a full sense.[10]

A calculation of economic interest in the national income, made in a very rough manner for the year 1945, yields an estimate of 12 to 14 billion dollars. This includes (1) interest on the federal debt at the computed rate, but excluding part of the payments to banks, regarded as compensation for services, (2) other interest in accordance with an adjusted version of the present Department of Commerce series, admittedly not a very perfect one, (3) an allowance for the imputed interest element in the return on the net worth of corporations, at a rate of $2\frac{1}{4}$ per cent, and (4) a similar allowance for the interest element in profits of unincorporated business, in farm income, and in rent. The total thus derived represents the aggregate of *economic* interest payments in the national income, but it should be regarded, not as a statistical computation, but as an indication of the order of magnitude of these payments. In a sense, the estimate is a "test of significance," indicating, in my opinion, that interest plays an important rôle in the national income, much more so than would appear from the volume of contractual interest payments.

The size of a 12 to 14 billion interest payment in 1945, measured against the 160 billion national income, is perhaps not particularly impressive. Nevertheless, it is as much as the net income of agricultural proprietors during that year. Moreover, these 12 to 14 billion interest payments were brought together at very low rates. While a rise in rates would have little immediate influence on long-term interest payments, with the passage of time it would be reflected to an increasing extent in contractual and imputed interest payments. At the rates prevailing in 1929, after these had had time to become effective, total interest might be something like 18 to 20 billion, or about 12.5 per cent of a 150 to 160 billion of income.

A further drop in rates from today's levels, on the other hand, would be reflected more rapidly in payments, since many outstanding obliga-

[10] The grounds on which the Department of Commerce excludes interest receipts of most businesses from its national income series on interest payments are somewhat different.

tions would be refunded. It is evident, therefore, that variations in interest rates are quite capable of producing substantial variations in this sector of national income.

Whether or not the relative importance of interest in the national income has increased over earlier years is a different question. Tentative calculations seem to indicate that the proportion of interest to income today is lower than in 1929, for instance. But this is due primarily to the prevailing low level of rates, which might not be permanent. The base upon which interest payments rest, *i.e.* the total volume of debts plus other income-earning assets to which interest may be imputed, probably is larger today relative to income than it was in earlier years, thanks to the growth in the public debt. One might therefore argue that potentially, *i.e.*, if rates should rise, interest seems to be more important today than formerly. But the likelihood of a return to rates like those of 1921 has fallen as the debt has risen, for obvious reasons, and a summary statement about the importance of interest payments relative to earlier years therefore is hardly possible.

B. *Redistribution of Income.* Who pays this interest and who gets it? Government interest is paid out of taxes, most other interest out of production. In either case it is clear that the fact that some individuals receive interest reduces the income retained by or received by others. (This does not dispute in the least the economic or social justification of interest; it merely follows from the principle that "the more there is of mine, the less there is of yours," once the size of the pie is given.) The second group, therefore, are the "interest payers" in an ultimate sense, even though most of their payments take the form, not of contractual interest, but of higher taxes and of lower wages, lower profits, and higher prices. As to the distribution of the burden among profits, wages and prices, one would expect the latter two to absorb most or all of it in the long run. In the short run any variation in interest costs, contractual and *imputed*, may impinge primarily upon profits. Eventually, however, such gains are apt to be competed away and cost increases to be passed on.[11] Very probably this process of competing away and passing on moves more rapidly in the case of out-of-pocket interest costs than with respect to the pure interest element imputable to profits. But in the long run, it seems to be true that business profits move in the same direction as the pure interest rate, so that variations in the latter are not merely absorbed by counteracting variations in the former, but carry over into prices and wages.[12]

[11] On the effect of present day low interest rates on the cost structure, *cf.* Albert H. Hahn "The Interest Rate Dilemma," *Commercial and Financial Chronicle* (Apr. 18, 1946), p. 2131.

[12] Cyclically, of course, this tends to be obscured by the fact that high interest rates during the boom phase are usually associated with high wages and prices.

Thus the payment of interest, public and private, obviously, makes the distribution of income different from what it would be otherwise. It is not quite accurate to speak of this as a redistribution of income, since interest, at least that on private debt, is a return to a productive factor and hence part of the original distribution of income. The use of the term "redistribution" in the present connection must be understood with this qualification in mind.

Unfortunately, it is not possible to make a good estimate of the degree of redistribution, since we lack sufficient data on the ownership of interest-earning assets which would be needed to estimate the interest received in each income bracket. There is no doubt that the great majority of the population participates in the ownership of assets to some degree, through insurance policies and savings deposits, if not through securities. The interest income of members of the lower-income brackets, however, is obviously a much smaller proportion of their incomes than that of wealthier people, since the latter are able to save more and in some cases are born wealthy.

As for the amount of interest *paid* by individuals in different income brackets some rough estimates can be made. For the interest on the federal debt, I made an estimate in one of the Federal Reserve Postwar Studies, on a *per capita* basis.[13] This estimate rests on an assumed tax structure outlined in the same publication by Richard A. Musgrave. Conclusions based on Mr. Musgrave's tax system hold fairly well for our present system, since the two do not differ too much in their degree of progressiveness. These figures are computed in Table II to eliminate interest paid to government trust funds and part of that paid to banks, which we have previously defined as a payment for services. They show that an individual's contribution to the federal debt service rises much more than in proportion to his income, owing to the progressive character of the tax structure. As far as the federal debt is concerned, therefore, the greater interest content in high-bracket incomes is to some extent balanced, conceivably even overbalanced for some brackets, by tax contributions to the debt service.

Of the interest payments other than on federal debt contributed at given income levels, a very rough idea can be formed by calculating the proportion of total private interest payments to national income, which for 1945 amounts to 6.2 per cent, and by assuming, therefore, that 6.2 per cent of the price of everything that is bought goes for interest. The non-federal "interest payments"—we shall call them "private," although they also cover the state and municipal debt—of any person would then be 6.2 per cent of the volume of his purchases. (This result

[13] *Op. cit.*, p. 90.

does not differ very greatly from what would be obtained by assuming, more realistically, that part of the interest burden falls upon wages instead of upon prices.) In Table II, the volume of private interest payments at different income levels is given in accordance with what seems a plausible estimate of the propensity to consume at these levels, with certain adjustments.[14] Obviously these figures have meaning only as an indication of orders of magnitude, not as precise estimates, and their usefulness is chiefly that of tests of significance. From these figures it appears that the burden of private interest falls more heavily upon people in the lower-income brackets. In other words, private interest is financed by something akin to a sales and payroll tax, and the results are correspondingly regressive.

TABLE II.—PER CAPITA "INTEREST PAYMENTS" AT DIFFERENT INCOME LEVELS

Income before Taxes	Contribution to Federal Interest[a]	Per Cent of Income	Other Interest Payments[b]	Per Cent of Income	Total Interest Payments	Per Cent of Income
$ 1,000	10	1.0	68	6.8	78	7.8
2,000	20	1.0	121	6.1	141	7.1
4,000	116	2.9	201	5.0	317	7.9
6,000	238	4.0	265	4.4	503	8.4
8,000	376	4.7	321	4.0	697	8.7
10,000	544	5.4	373	3.7	917	9.2

[a] Adapted from table "Contributions of Taxes to Debt Service Under Assumed Postwar Tax System" in author's "Public Debt and Income Flow," *Public Finance and Full Employment*, Postwar Econ. Stud. No. 3 (Board of Governors of the Federal Reserve System, 1946), p. 90. Based on federal interest payments at computed rate aggregating 4.6 billion dollars, which excludes a part of payments to banks; see text.

[b] Computed by applying the proportion of non-federal interest payments to total national income (6.2%) to the estimated expenditures of individuals at various income levels.

By adding together the contribution to federal and private interest, we obtain the total interest burden at each income level. Table II shows that this burden is practically proportional to income, over the 1,000 to 10,000 dollar range. While this conclusion must be accepted with considerable reservation, it is nevertheless an interesting one. Worthy of observation is also the fact that it is the outcome of two conflicting tendencies: the progressive character of the federal interest burden and the regressive one of the private interest payments. A major shift in the proportion of federal and private interest might bring one or the other tendency to predominance.

Having thus worked up a rough sketch of the incidence of the interest

[14] These adjustments try to take into account the fact that a part of saved income, too, is directly or indirectly employed in the purchase of goods whose price contains an interest element. They also try to take into account the fact, working in the opposite direction, that many of the goods consumed chiefly in the higher brackets appear to contain relatively less interest.

burden, we can draw some even rougher conclusions as to the character of the redistribution of income produced by the interest flow. Although we do not know what proportion interest receipts constitute of income at different levels, it is obvious that it is an increasing one. Everybody agrees that the relatively rich save a larger proportion of their income than the relatively poor, which means that their interest receipts must also be a larger proportion.[15] The results of the recent Federal Reserve survey of liquid assets amply confirm this belief.[16] Thus, interest levied with a roughly proportional incidence upon the various brackets is received predominantly in the higher brackets. This clearly makes for greater inequality in income distribution than would otherwise prevail.

The fact that interest payments in the various brackets are virtually proportionate to income suggests that the additional inequality of income distribution produced by the interest flow is not so large as sometimes seems to be assumed. Nevertheless, this "redistribution" via interest is worthy of attention, particularly in view of the effect which long-run changes in interest rates would have upon its magnitude.

Obviously, there are certain social implications in the impact of interest upon income distribution. An increase in rates, unless accompanied by a rise in total income, would be quite a setback to the inhabitants of the lower brackets. To a man with a 2,000 dollar income, a rise of long-term rates by one full percentage point might eventually mean an added interest burden close to 50 dollars annually, once all adjustments have worked themselves out. The compensatory gain in interest receipts would make up for some of this, but, in the average case, certainly not for all. At a 4,000 dollar income, the extra gross burden might be around 100 dollars, but the degree of compensation through higher interest receipt would be better.

Certainly these added burdens are too small to stand in the way of a higher interest rate policy if its adoption seems important for other reasons. But in the absence of such reasons, there is at least something to be said for low rates on the grounds of social equity.

V. *Saving and the Interest Rate*

Disquisitions about the supposed effect of the interest rate upon saving are apt to be shrugged off as inconclusive, unimportant, and rather tedious withal. Stimulated by the painful pressure of falling rates, however, the subject has recently come to life in various quarters, most conspicuously in comments about the rising cost of life insurance.[17]

[15] In addition, many people are rich precisely by virtue of their large interest incomes, quite independently of whether they save much or little.

[16] "National Survey of Liquid Assets," *Fed. Res. Bull.* (July, 1946), pp. 574–580.

[17] *Monthly Letter of the National City Bank of New York* (June, 1946), pp. 69–70; *103rd Annual Report to Policyholders for the Year 1945*, Mutual Life Insurance Company of New

It may therefore be worthwhile to discuss the matter in the light of the quantitative estimates made above of the volume and distributive effects of interest payments.

In the first place, it needs to be pointed out that, as long as permanent full employment is not assured, there is a strong tendency for the total volume of saving to be determined by the volume of investment, plus or minus the net balance of payments and the fiscal deficit (or surplus). It is only at full employment that the savings which the public is willing to make become a limiting factor; below that they largely tend to adjust themselves, through fluctuations in income, to the level which is indicated by the demand for them. (This does not rule out that in many instances savings do "cause" new investment, but I doubt that quantitatively these instances are very important.) Thus the immediate answer to the question of the effect of the interest rate on saving is that it depends mainly on the effect of the interest rate on investment.

Of course this is not what we are really after. The real question is the effect of the interest rate, not on realized saving, but on the *propensity* to save. Now as far as the *incentive* to save out of a given income is concerned, most economists probably would agree that the interest rate is immaterial within a wide range. The price effect, in other words, seems small. Any substantial influence must come from the income effect of a higher or lower rate. But here, too, results at first sight seem inconclusive. For while low rates undoubtedly hamper saving by reducing the income on past saving, they do, on the other hand, put additional pressure to save on prospective annuitants, aiming at a given retirement income. The net result may be either way.

It has been argued (most illuminatingly by Professor Cassel)[18] that at very low rates rentiers would find it so hard to live on their incomes that large-scale capital consumption would ensue. This, of course, is another full-employment argument, for so long as employment is capable of rising, any dissaving on the part of one group will tend to produce such a rise, and will thereby occasion an offsetting increase in the saving of other groups.[19] But even on full-employment assumptions, arguments alleging a substantial decline in total saving as a result of lower interest rates are very vulnerable. Their weakness is that they consider only the plight of the interest receiver and disregard the boon of lower rates to the interest payer. In an earlier part of this section we

York, p. 4; Ludwig von Mises in an unpublished address at a symposium on postwar interest rates, under the auspices of the National Industrial Conference Board, May, 1946.

[18] *The Theory of Social Economy* (New York, 1924), pp. 224–238.

[19] In conditions of full employment, dissaving would tend to produce an increase in prices which in turn would probably raise interest rates, and in this and other ways, would occasion additional savings until equilibrium is reëstablished in this painful manner.

observed the mechanism of the interest flow, how every dollar of interest received by someone in direct or imputed form, is paid by someone else in the form of higher prices, lower wages, or lower profits. A fall in rates reduces the income of interest receivers, and hence their ability and willingness to save, but it equally increases the incomes of interest payers, and their ability and willingness to save is thereby increased. If interest payers and interest receivers were equally represented along the income scale, so that the nature of the income distribution is not altered by the interest flow, the reduction in saving on one side should be balanced exactly by the increase on the other. There would then be no change in the total propensity to save at all.

This view might be challenged by saying that there seems to be a tendency to save more out of interest income than out of earned income. This at least seems to be the impression produced by the way in which many people allow their interest on bank accounts and savings bonds, etc., to accumulate. But that impression probably has little validity. It overlooks that decisions to save out of earned income are usually made in the light of prospects for automatic accumulation out of interest. The *total* income, in other words, is chiefly determining for saving, not how much of it is received in the form of interest.

Granting, then, that an interest flow which did not alter the distribution of income, would not alter the propensity to save, or only very minutely, what is the real situation? We found above that the interest flow does bring about a redistribution of income, in the direction of greater inequality, because interest receipts are bunched in the higher brackets. Since saving habits are stronger there, the over-all propensity to save is likewise increased. The redistribution effect of the income flow is greater, naturally, the higher the interest rate and thus the size of the flow. We therefore find confirmed the popular view that a rise in the interest rate increases the propensity to save. However, it is important to note that, in contrast to the popular view, this is not because everybody's propensity to save is increased. The reason is, rather, that higher interest rates shift income from those who save little to those who save much.

From this a second conclusion follows: For the "little man" who inhabits the lower brackets, saving is made harder, not easier, by higher interest rates. Higher rates do give him a better return on his money, but what they take away from him is more. Since the better interest return fails to make up for his reduced income, the net result probably is lower saving for the "little man."

By industrious saving, the little man can, of course, overcome the odds which a high interest rate builds up against him. He may eventually have enough to give him an interest income larger than his inter-

est payments. Toward the end of his working life, this may even be the normal condition, since a person's volume of assets obviously depends upon his age as well as his saving habits. But a high interest rate makes the road to the turning point where interest receipts begin to exceed interest payments more of an uphill struggle, and delays the approach of the turning point.

A third conclusion follows from our statement regarding the power of higher rates to stimulate saving. If the over-all propensity to save rises, the leakage from the income stream is increased and national income will fall unless the additional saving generates an equal amount of additional investment. I have already expressed my doubts that such "self-investment" of savings can be anything but small, and hence a fall in income seems highly probable.

Any quantitative estimate naturally is out of the question. Probably the amount goes into several billions. If, for instance, the marginal propensity to save of the interest payers were 30 per cent on average and that of the interest receivers were 60 per cent on average, then a 12-billion-dollar interest flow would bring an increase in saving of 3.6 billion. Assuming a multiplier of two, this would signify a drop in income of 7.2 billion, unless some of the extra saving were "self-investing." A rise in interest rates which would lift the interest flow to 20 billion would then produce an income drop of 12 billion.

All this, however, is speculation. All we can say is that changes in interest rates, because of their redistributive effect may, in the long run, lead to considerable income changes. Be it noted, furthermore, that this assumes that the change in interest rates is due to government action. If it is the result of changing investment activity, the effect of redistribution may be partly or fully offset, or quite likely even overbalanced, by the effects of such activity.

VI. *Changes in Asset Values*

The interest rate also works upon national income via its effects upon the value of assets. Changes in market rates of interest produce changes in the capitalized value of income-yielding assets. The longer the term of an obligation, the greater its response to changing rates. For equities and preferred stocks, being perpetual claims, a change in market rates can be fully reflected in the current yield and hence in the price (barring the effect of the call price upon callable preferreds).

Such capital gains and losses, realized or unrealized, do not enter into national income. Nevertheless, they may have important repercussions upon income, because they are apt to affect the expenditures of the capital gainers or losers. Lord Keynes always seems to have been fascinated by the extra fillip which bull and bear markets appeared to give to the American cycle. The big movements, however, usually are

set in motion by shifting profit expectations, and are only secondarily influenced by interest capitalization factors. The question is how far movements primarily due to interest rate changes tend to create enthusiasm or caution in spending.

The crucial difference in the latter case is that interest and dividend income remains unchanged by the rise or fall in capital values. Eventually, in fact, income will move in the same direction. In the case of a fall in interest rate, bond and preferred stockholders will find that happening quite soon, as their securities are being refunded. They will therefore have little incentive for capital gains spending, quite apart from the fact that the typical holders of high-grade securities, where interest rate changes are quickest to be reflected in price, ordinarily are not of the sanguine spending type. The large-scale capital gains on new government securities made by free riders and speculators in recent years, which may have produced a certain amount of spending, were a wartime phenomenon not likely to be repeated soon in significant volume. A rise in interest rates, reducing the capital value of high-grade securities, likewise is apt to have little effect on expenditures, for the same reasons.

The effect of interest movements on common stocks and similar assets, moreover, is likely to be obscured by changes in profit expectations. In former years, these two factors tended to work in opposite directions—rising interest rates during booms tending to lower values and rising profits tending to raise them, and *vice versa* in depressions. In these cases, the influence of interest rates, of course, was completely swamped. During the rise of the thirties, and again during the latest upswing, profit expectations and interest rates have combined to push up common stock prices, and thus interest rates must share some of the responsibility for the capital gains spending which may have come out of these two bull markets. How large this share may be is very uncertain.[20] In contemporary British discussions of interest policy, the danger of large-scale capital gains spending is given considerable emphasis. Lord Beveridge, for instance, mentions it as one of the two major obstacles to a sudden reduction of rates close to zero.[21] Possibly this emphasis results from contemplation of the extreme case of a virtual annihilation of the pure long-term rate. Within the more modest scope of contemporary American interest policy discussion, I doubt that more than moderate importance attaches to this angle.

In addition to its influence over expenditures, the capitalization

[20] It is worth noting that the biggest gains usually were scored in securities whose return is very uncertain, which in turn deprives the capitalization factor of much of its importance.

[21] *Full Employment in a Free Society* (London, 1944), pp. 340–41. Also see E. F. Schumacher, "Public Finance—Its Relation to Full Employment," in *The Economics of Full Employment* (Oxford, 1944), p. 113.

factor is of considerable importance to banks and other institutions with a stake in longer-term securities. Particular significance attaches to rising rates, of course. The danger to the practical solvency of the banking system probably is slight, as has been repeatedly pointed out.[22] The conservative portfolio structure of most banks makes it unlikely that any foreseeable loss of deposits to individual banks or to the system as a whole could force large sales of securities at a loss. The morale effects of a sharp drop in the market value of bank portfolios, however, might be considerable, for bankers and public alike might feel rather uncomfortable while "sweating out" the return of securities to par. The former might react by cutting dividends and becoming hyperconservative on loans, while the public might begin shifting deposits in search of safety. Thus, a sharp rise in interest rates might have considerable repercussions. In this connection, one may also recall Mr. Seltzer's observations on the possible impairment of public confidence in government credit, if a rise in the market rate to 5 per cent should occur with a consequent drop in the longest maturities to 65 or less.[23]

Thus it has happened that the control of capital values in the bond market has become one of the most important aspects of present-day monetary policy. A central banker, now, shows the same concern over developments affecting his carefully constructed rate pattern as over movements in his member banks' reserve position. To some extent, of course, this is the result of such commitments as exist between the central bank and its government for the maintenance of the price of public securities. But beyond that, there is the realization that major movements in security prices may prove definitely unsettling. The likelihood of such movements is particularly great in countries where, as in the United States, the maintenance of an existing rate pattern in part depends precisely upon the public's skepticism as to its maintenance.

It is in this light that some of the small maneuvers engaged in by central banks, which would otherwise seem almost microscopic, viewed against the magnitude of present-day credit control problems, must be understood. If long-term bonds are to be prevented from rising, as they have tended to do in the United States, it is necessary for the central bank to maintain the public's liquidity preference. This it can do, in some measure, by occasional actions which create doubt in the public mind as to the stability of long-term securities. The recent removal by the Federal Reserve Banks of the preferential rediscount rate for short-term government securities seems to have been an instance of this type of policy.

[22] *Cf.* Paul A. Samuelson, "The Effect of Interest Rate Increases upon the Banking System," *Amer. Econ. Rev.*, Vol. XXXV, No. 1 (Mar., 1945), pp. 16–27.

[23] "Is a Rise in Interest Rates Desirable or Necessary?", *Amer. Econ. Rev.*, Vol. XXXV, No. 5 (Dec., 1945), p. 844.

VII. *Special Sectors*

The growth in the debt and the drop in interest rates which accompanied it have combined to produce serious income problems for several special sectors of our economy. Among these are (a) rentiers, (b) endowed institutions, (c) the United States government, and (d) in a reverse sense, the commercial banks. We shall attend to them in that order.

A. *Rentiers*. A small saver who retired a few years ago with accumulations of 10–20,000 dollars has experienced all the misfortunes which could befall him in a well-organized economy. During the greater part of his working life interest rates were high, which made saving harder for him, since his income presumably was low. He was hit by the depression and may have sustained some losses, and may also have had to dig into capital if he lost his job. Then, when he reached the point where the growth of his capital began to make his interest receipts greater than his payments, so that he might have benefited from high interest rates, these declined. Eventually taxes went up and rising prices contributed to his whipsawing.

This list of woes shows up the serious plight today of the small rentier. It also shows, however, that interest rates are only one of his problems, and probably not the main one. Moreover, many small rentiers are contractually protected against falling rates, through the provisions of their pension funds and their insurance policies.[24] The war, moreover, has provided compensation in some cases, through the rising value of homes and opportunity to return to work, for instance.

The large rentier, although in many respects harder hit, is better off in that to him capital consumption is an additional resource, while the small rentier has to rely on it in any case. Where trust restrictions and other obstacles prevent this, the situation of large rentiers can become difficult.

All in all, there can be no question that the position of rentiers is becoming increasingly difficult and that the fall in interest rates is an important contributory factor. To the rentier interest is much more important as income than as cost, in contrast to younger savers in the lower-income brackets. And, unlike these, he is defenseless, because he usually cannot earn any more. With others of his kind, he forms a dispersed and therefore weak group which deserves more national consideration than it is getting.

At the present time, unfortunately, we have next to no statistical knowledge of the magnitude of the problem. But even if the number of people partially or wholly dependent upon interest receipts should turn

[24] It is reported, for instance, that of the lump sum payments made by life insurance companies, about 40 per cent in recent years were left with the companies at interest at a rate determined by the original policy.

out to be very important, there are serious doubts whether the interest policy of the country should be guided primarily by this fact. Moreover, a rise in rates would hurt rather than help many, by depressing bond values. It would provide better yields only as such bonds mature, a rather poor prospect for people in their sixties and seventies. At most, one may argue that a further reduction in rates should be postponed, unless there are strong reasons favoring such action. The best solution perhaps would be to provide special securities,[25] with a limitation upon total holdings, or to create similar facilities via savings banks. Series E savings bonds are a step in this direction, although ten years are a long time for some people to wait for their 2.9 per cent. Perhaps some more substantial subsidy would be in order. Rentiers cannot demand that overall interest policies should be formulated primarily to suit their needs, but they are entitled to some protection against the treatment they are undergoing now.

B. *Endowed Institutions.* Academic readers need no explanation of what low interest rates are doing to endowed educational, scientific and charitable institutions. But here, even more than in the case of rentiers, it seems clear that the quantitative importance of the problem does not warrant a major modification of overall interest policy, unless that policy happens to find itself on the margin of indifference in every other respect. It is true that on the qualitative side endowed institutions have a strong claim to consideration, for expenditures for education and research add more to our standard of living than almost any other. The amounts involved, however, are small.

Total income-producing funds of American foundations were estimated at $1,074 millions in 1940, on which an income of $30 million (not all of it interest) may have been received.[26] The total income-producing assets of all endowed institutions were estimated at $7–9 billions in 1930.[27] If subsequent accretions were roughly balanced by losses, this sum today might produce an income of around $300 millions. Even if all of this were interest (in our sense), it would only be 2.5 per cent or less of the total estimated interest flow.

Again the most adequate solution would be the issuance of special federal securities.[28] This would recognize the special importance of endowed institutions without encumbering overall interest policy with undue concern for relative minutiae.

C. *The Government.* There is little doubt that, in the mind of the

[25] *Cf.* John H. Williams, "The Implications of Fiscal Policy for Monetary Policy and the Banking System," in *Postwar Monetary Plans and Other Essays* (New York, 1944), p. 100.

[26] Geneva Seybold, *American Foundations and Their Yields* (New York, 1942), p. 151.

[27] This does not include the land and buildings employed by such institutions for their own use. *Trusteeship of American Endowments* (New York: Wood, Struthers and Co., 1932), p. 39.

[28] This suggestion was made by David McCord Wright in *The Creation of Purchasing Power* (Cambridge, 1942), p. 219.

public, the main reason for keeping interest rates low and perhaps pushing them down further is the cost of the public debt. I shall endeavor to show that, as a major determinant of interest policy, the cost of the public debt is greatly overrated.

In the first place, the net amount of federal interest payments is considerably smaller than it would seem. The total annual payment on a $260 billion debt, at a computed rate of close to 2 per cent, is slightly over $5 billion. But of this unquestionably impressive sum, as much as $1.3 billion is recouped by the Treasury, through taxes on the marginal income represented by public debt interest receipts and by payments into government trust funds.[29] This reduces net payments to slightly less than $4 billion.

In the second place, part of the government's interest payments have a special character which puts them into the category of desirable subsidies. Part of the payments to banks, *i.e.*, those which the banks need to cover part of their running expenses, are in this class. An attempt to reduce public interest payments to the banks below the level required to cover these expenses, would not relieve the public of paying for the operation of our monetary system. It would merely change the form of these payments which would then have to be made partly through service charges. Another desirable subsidy element is contained in E bond interest, in so far as this goes to alleviate somewhat the plight of rentiers.

In the third place, the federal interest charge is in some respects less of a burden upon the economy than other types of government outlays. Interest payments are not "exhaustive" expenditures; they do not, like military expenditures, absorb productive resources which otherwise would be available to the economy. Thus, their damaging effects are limited mainly to the harmful impact of the necessary taxes upon investment, to the greater inequality of income distribution which they produce, and to their tending to crowd other desirable expenditures out of the budget.

Withal, it cannot be denied that the federal interest charge is an important matter, and that it represents a powerful argument against higher interest rates. The danger is that this argument might become all-powerful because it is so much in the public mind and because, like a tumor, it constantly presses against the consciousness of public officials. It should be viewed in its proper proportions and in relation to all other factors bearing upon interest policy.

D. *The Commercial Banks.* The income problem of the banks differs very notably from that of the sectors surveyed before: they earn, not too little, but, in the opinion of many observers, too much. Actually, the problem of high bank earnings is a potential rather than real one. Before

[29] *Cf. Public Finance and Full Employment,* p. 86.

Hiroshima, when another year or so of war was expected, with a depression thrown in at the end, it was anticipated that bank holdings of federal securities and hence their earnings might continue to expand greatly. The favorable course of developments has kept bank earnings far below these expectations.

In 1945, net current earnings before income taxes of Federal Reserve member banks amounted to 11.5 per cent on their capital accounts, which was brought down to 7.8 per cent by income taxes. A reduction of about $135 million[30] in interest receipts would suffice to reduce this ratio to the average return of 6.5 per cent estimated for all corporations in 1945.[31] This would leave untouched the additional 3.2 per cent return realized through profits and recoveries in excess of losses, which do not constitute regular income.

Generally speaking, therefore, concern over high bank earnings applies not so much to what is now as to what might happen if short-term interest rates were allowed to rise, or if the banks shifted heavily into longer maturities. Even if bank earnings should rise substantially, one may perhaps ask why large earnings of one group should become a cause for extreme concern while the hardships of other groups fail to attract much attention. But since high bank earnings come so largely out of the public purse, there is the distinct danger of political attacks upon banks, and in this sense there is real cause for concern.

It would be very unfortunate, however, if bank earnings should become a major determinant of our interest policy. Of this there now seems some danger. Instead of allowing interest policy to be straight-jacketed by this anorganic criterion, an *ad hoc* solution should be found. Many have been proposed, the latest being the three alternative suggestions made by the Board of Governors of the Federal Reserve System in its recent annual report.[32] They would give the Board more freedom in its general interest policy while protecting the Treasury against higher interest costs and the banks against the consequences of excessive income from the government.

There is another income problem affecting the banks which derives, not from high earnings on low-interest public debt, but from the decline in interest rates and risk premia on other securities and loans. It was pointed out earlier, in connection with the discussion of the risk element, that very low interest rates tended to drive down the risk rate. Lenders are forced to reach out for less secure investments in order to obtain what looks like a good return. There is some evidence that many smaller banks, accustomed to high rates of return and not favored by large deposit increases, have been forced to reach out in this manner and have

[30] For all commercial banks the amount would be slightly higher.

[31] National City Bank letter, April 1946, p. 47.

[32] *Annual Report of the Board of Governors of the Federal Reserve System for 1945.*

thereby weakened their position.[33] The importance of, and probable consequences of, this trend are as yet impossible to assess. It may be, however, that in the next depression the difficulties experienced by weak lenders may present us with a not inconsiderable bill for this feature of our easy money policy.

VIII. *Toward a Zero Rate?*

In some quarters, particularly in Britain, there has been serious discussion of the possibility of a zero long-term rate.[34] It is felt that if the long-term rate is primarily a risk premium, paid to overcome liquidity preference, then by eliminating this risk through complete stabilization of the bond market, the authorities could bring the rate to close to zero. A few additional controls would suffice to snuff it out altogether. It has been argued that this would be the sensible thing to do in the face of a constant tendency to oversave. If people continued to court stagnation by trying to save more than the economy could invest, they should at least not be paid for doing so.

These thoughts are not without logic. But the proposal to push interest to zero brings us face to face with the fundamental question of the continuance of our capitalistic system. Interest is both an outstanding symbol of this system and a basic element of its most characteristic institutions. If we do away with interest, will the rest of the system stand? With banking and the capital market greatly weakened, the building of personal fortunes further impeded, the whole concept of a return to ownership undermined, what kind of economy would we be going into?

It seems futile to think of curing the illnesses of the capitalistic system by amputating one of its vital organs. It would also be dangerous and, in a sense, a little presumptuous. The danger would be in the existence of a fixed policy commitment—a new element of rigidity. If conditions should arise tending to revive interest, the policy would have to be enforced by additional controls or abandoned in disorder.

The presumption would be in the attempt to eliminate a phenomenon with a long historical background which is deeply ingrained in our thinking, not to say in our nature. It cannot be claimed that there is a historical down-trend in interest rates destined to glorify our age with its culmination. Three hundred years ago, the rate on high-grade risks charged by Dutch investors was about 3 per cent. Before the French revolution, the rate in France was $2\frac{1}{2}$-$3\frac{3}{4}$ per cent.[35] Through fairly long periods of the 19th century, long-term rates were as low as $2\frac{1}{2}$–3 per cent. Taking the historical approach, we ought to be impressed, rather, by

[33] *Cf.* J. H. Riddle, *Debt Management and Interest Rates* (New York, 1946).

[34] *Cf.* n. 21, p. 779.

[35] Cassel, *Theory of Social Economy*, p. 202.

the extraordinary ability of interest rates to recover to high levels, as during the 1920's. In this perspective, the present decline in the rate tells us very little as to where it will eventually be going.[36]

If we should be facing continued stagnation of private enterprise, a further decline in rates may be desirable and proper. In the long run, however, stagnation probably would bring the capitalistic era to an end in any case. But over a long period of time, the outlook for stagnation depends not only on investment outlets, but also on the propensity to save. If the latter should adjust itself to low capital requirements, we might have a very limited investment activity with nevertheless active competition for available funds.

Conclusions

Our discussion has confirmed, I believe, the view put forward at the outset, that the interest rate today is more of a factor influencing the volume and distribution of income than an instrument of cyclical control. It has also yielded several conclusions about current interest policy, which I proceed to summarize.

1. We have found no single overriding consideration calling for any particular kind of overall interest policy—higher rates, lower rates, or stable rates. Instead, we have come across a number of separate desiderata, many of them in conflict with each other and none weighty enough by itself to swing the issue. This is quite in line with the rather diffuse effect now characteristic of the interest rate.

2. Nevertheless, among these diffuse factors there are several which argue strongly against an extreme policy in either direction—a sharp rise or a sharp reduction in rates. The danger of a downward spiral, the need to maintain confidence in the public credit, and the position of the banks practically prohibit a severe tightening of credit. The danger of a wild boom in capital assets, the problems facing rentiers and endowed institutions, and the uncertainties of the future speak strongly—perhaps not quite so strongly—against a reduction in rates close to zero. But within reasonable limits, none of these aspects can be said to rule out any particular policy.

3. The needs of certain sectors and the requirements arising from particular conditions, which may be in conflict with the policy actually

[36] In the long run, I have no doubt but that economic forces rather than policy are determining for the level of interest rates. At any given moment, policy probably can fix rates at any level it wants to, within reason. But if this level is very far out of touch with basic trends, the results of such policy are apt to burst out at the seams of the economy in ways familiar to the reader. These consequences are apt to force a reconsideration of policy, to bring it more into harmony with conditions produced by the trend of investment and saving. It is in this sense that the above remark must be understood about where the interest rate will eventually be going. Although at any given time the rate is determined by policy, policy itself is influenced to a large extent by the factors which in its absence would determine the rate.

pursued, are often capable of being met, at least in part, by *ad hoc* solutions. If interest rates are low, the problems of small rentiers and endowed institutions could be met by special limited issues of higher coupon securities. The need for cyclical regulation of credit could be dealt with by operating directly on availability, instead of via interest rates. Embarrassingly high bank earnings could likewise be handled outside the main stream of interest policy.

4. The demands and needs which cannot be taken care of in this form must be compromised by overall interest policy. The policy best suited to reconcile conflicting claims would be one of stable rates for the present and also for the foreseeable future, unless long-run depression should develop. In that case, a moderate further reduction in rates would be desirable. This view rests upon the following considerations:

(a) Under present conditions of high income and inflationary pressure, the aspects calling for lower rates—more equal income distribution, reduction in overall propensity to save, and stimulation of investment—lose much of their importance. They would gain weight if long-run deflation trends should develop.

(b) The cost of the public debt, which likewise speaks in favor of lower rates, is less important than its dollar amount would indicate, and should not be allowed to weigh heavily in our considerations.

(c) Factors suggesting higher rates—inflation control and the needs of rentiers and endowed institutions—likewise do not carry enough weight to make them decisive, particularly when they can be dealt with by *ad hoc* measures. They do, however, add to the case against a further lowering of rates now.

(d) Under present conditions, stability in the value of capital assets is preferable to a sharp move in either direction. This stability would be aided by stable rates.

The general picture of interest policy which thus takes form is one of increasing compartmentalization of the market and an absence of fixed commitments. This will enable us to deal with special aspects on their own merits, and to meet broader situations as they develop.

The proposed approach is very much at variance with diverse alternatives of public debt policy currently proposed—refunding of the debt at higher rates, uniform conversion of the debt into consols, or sharp reduction of rates. It is much closer to the policies actually being pursued. It suggests, however, that the practice of market differentiation already adopted in an embryonic form should be carried to its logical conclusion, and that more attention should be given to the broader impact of interest rates and less to special factors like bank earnings and budgetary costs.

THE BURDEN OF IMPORT DUTIES

By Earl R. Rolph*

I

John Stuart Mill once wrote: " . . . a tax on imported commodities . . . almost always falls in part upon the foreigners who consume our goods; . . . this is a mode in which a nation may appropriate to itself at the expense of foreigners, a larger share than would otherwise belong to it of the increase in the general productiveness of labour and capital of the world, which results from the interchange of commodities among nations."[1]

Thus Mill lays down the principle that a country by imposing import duties can force foreigners to bear taxes. By "foreigners," Mill does not mean foreign producers of products subject to duties when sold abroad. A case might be made for the view that duties are sometimes shifted "backward" to the producers of taxed items. It might be argued where duties are imposed upon sugar imports, for example, that the price of sugar received by foreign sellers would decline relatively to the price in the absence of the tax and that, therefore, they are bearing at least part of the burden. Discussions of the burden of import duties have sometimes been conducted along these lines.[2] But Mill's views are quite different from these. He would deny that foreign producers might be forced to bear even a part of the burden of import duties of sugar-using countries and states positively: "It is the foreign consumer of our exported commodities who is obliged to pay a higher price for them because we maintain duties on foreign goods."[3] If we adhere to Mill's theories, we must say that foreign buyers of U.S. exports are bearing part of the burden of U.S. import duties.

Mill developed his conclusions concerning the burden and effects of import duties with the concept of reciprocal demand. This technique of analysis was taken over, improved, and made moie definite by the neoclassical school, including Edgeworth, Marshall, and Pigou. These outstanding thinkers in the field greatly refined the reciprocal demand technique without, however, reaching conclusions concerning the burden of import duties differing substantially from those laid down by Mill.

* The author, assistant professor of economics at the University of California, acknowledges indebtedness to his colleagues, Professors Howard S. Ellis and William Fellner, for helpful criticisms of this paper.

[1] J. S. Mill, *Principles of Political Economy*, Ashley ed. (London, Longmans Green, 1909), p. 854.

[2] *Cf.* Otto von Mering, *The Shifting and Incidence of Taxation* (Philadelphia, 1942), pp. 150–151, 182; *cf.* Bastable, *Public Finance*, 3rd ed. (London, 1903), pp. 572–573.

[3] Mill, *op. cit.*, p. 655.

Edgeworth, who calls Mill's exposition of international trade theory "unsurpassed,"[4] examines the implications of the concept of reciprocal demand and Mill's doctrine that import duties are borne in part by foreigners, placing himself on the side of Mill in opposition to the critics who claim import duties are borne by consumers of taxed imports.[5]

Marshall likewise endorses the Mill view of the incidence of import duties and is much concerned about the obstacles they interpose to international trade.[6] Pigou differs only slightly from Marshall as far as the subject of import duties is concerned, but his remarks are nonetheless interesting from the point of view of tax theory because Pigou attempts to integrate the Mill theory of the burden of import duties with taxation theory generally. Pigou comes out unequivocally for the position that import duties " . . . will also always exact *some* contribution from foreigners."[7]

The achievements of the neo-classical writers in international trade in connection with the effects of import (and export) taxes are of course impressive. Not only is it argued that import duties fall in part upon foreign consumers, but the burden of import duties is shown to be symmetrical with export duties, if it is assumed that the tax is levied in export goods, or if levied in money, the "proceeds" are spent upon export goods.[8] Unlike many features of neo-classical economics, its theory of the incidence of import (and export) duties is couched in terms of general equilibrium analysis. It even takes account, as some students of public finance say one ought, of how the government spends the tax proceeds.[9]

[4] F. Y. Edgeworth, *Papers Relating to Political Economy* (London, 1925), Vol. II, p. 20.

[5] *Ibid.*, pp. 13–14.

[6] Marshall's comments upon this problem are set forth in *Money, Credit, and Commerce* (London, 1923), Chapts. 9, 10, and Appendix J.

[7] A. C. Pigou, *A Study in Public Finance* (London, 1929), p. 207. Italics are in original.

[8] A. P. Lerner in his article "The Symmetry between Export and Import Taxes" (*Economica*, N. S. 3 [1936], pp. 306–313) refutes Edgeworth's doubts to the contrary and also develops a formal technique for showing the burden of import and export taxes, however the taxing government "spends the tax receipts." The symmetry argument is also presented by Marshall (*op. cit.*, p. 183) and by Pigou (*op. cit.*, p. 203).

[9] M. Slade Kendrick has criticized the neglect in neoclassical tax theory of "how the government spends the tax proceeds" and urges that where tax revenues are earmarked for particular expenditures, such as the yield of gasoline taxes, the public expenditures effect should be included in discovering the tax burden ("Public Expenditures in Tax Theory," *Am. Econ. Rev.*, Vol. XX, No. 2 [June, 1930], pp. 226–230). His criticism does not apply to the neoclassical treatment of import duties since it does take account of government expenditures. The neo-classical position, as far as import duties are concerned, is perhaps more in accord with the suggestions of Alfred G. Buehler that one should go all the way and take account, in tax theory, of how the government spends the revenue whether earmarked or not. (*Cf.* "Public Expenditures and the Incidence of Taxes: Some Theoretical Considerations," *Am. Econ. Rev.*, Vol. XXVIII, No. 4 [Dec., 1938], pp. 674–683). My opinion concerning the proper way of viewing the relation between government expenditures and tax theory is set forth below, pp. 809–11.

Yet with all due respect to the brilliance of Mill's arguments and the careful analytical support they have received at the hands of Edgeworth, Marshall, Pigou, and others, one may properly doubt the conclusion that foreign consumers of U.S. products bear part of the burden of U.S. import taxes. The neo-classical preoccupation with *real* matters, such as the terms of trade, to the exclusion of monetary mechanics, alone makes it suspect. The lack of symmetry between their arguments concerning the incidence of internal taxes and of import duties also creates doubt as to the general validity of the theory.

In place of the neo-classical view, I shall propose first that the burden of import duties *always* rests upon a certain economic segment of the country levying the import duties and *not upon foreigners*, and second that this segment is *not* the consumers of taxed imports. It is, on the contrary, those who own resources, both human and non-human, in the export industries and those who own resources competitive with resources located in export industries. These people bear the tax in the form of a reduction in their money incomes in a fashion analogous to a partial proportional income tax (with no exemptions) collected at the source. They must sacrifice money income equal to the yield of the tax to the Treasury. This position differs therefore not only from the neo-classical view of the burden of import duties, but also from the theory developed with the use of partial equilibrium technique concluding that domestic consumers of the country imposing import duties bear such taxes.[10]

II

The essentials of the neo-classical argument concerning the incidence of import duties may be presented graphically by the use of reciprocal demand schedules (See Figure 1). Suppose that two countries, the United States and England, carry on their foreign trade in only two commodities and that there are no other international transactions: the balance of trade and the balance of payments are identical. England sells whiskey to the United States, and the United States sells cotton to England. In Figure 1, OA shows the amount of American cotton (measured along OX) which will be exported for various quantities of whiskey imported (measured along OY) from Britain. Likewise, OE measures the export supply schedule of British whiskey in terms of cotton. The schedules may be visualized readily if it is supposed that traders in the United States buy cotton with dollars, export the cotton to England, sell it for pounds, buy whiskey in England with all the pounds so obtained, and export the whiskey to the United States where it is sold for

[10] Such is the argument of Professor Lionel Robbins and Mr. G. L. Schwartz presented in the work of Sir William H. Beveridge and others, *Tariffs: The Case Examined* (London, 1932), p. 173. See also in fn. 2 above.

dollars. If the traders' costs may be considered to be zero, and if perfect competition prevails among traders at every stage, traders will increase exports of cotton and imports of whiskey to the "break-even" point, shown as P in Figure 1.

As a limiting case, one which Marshall regards as an "Exceptional Demand" case, let it be assumed that England's demand for U.S. cotton has an elasticity of unity within the relevant range.[11] In Figure 1, this case is illustrated by showing the relevant portion of OE, *i.e.*, CE, as

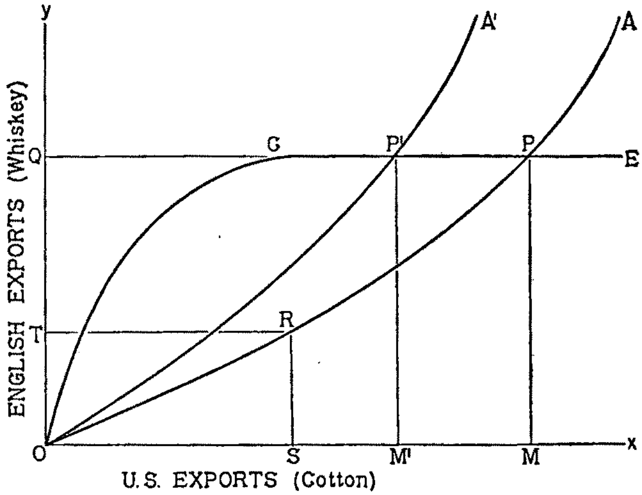

FIGURE 1

perpendicular to the OY axis. Still following the neo-classical argument, suppose now that the United States levies a duty upon whiskey imports to be paid in exports.[12] With the imposition of the tax, the terms upon which the traders will now export cotton in exchange for whiskey change, as indicated in the shift to the left from OA to OA′. If, as is assumed in Figure 1, the English demand for cotton has an elasticity of unity within the relevant range, the tax leaves the volume of American imports of whiskey unchanged (P′M′ = PM) whereas the volume of U.S. exports of cotton falls (measured by M′M). Thus Mill's conclusion appears to follow, namely that in these circumstances, English consumers of cotton bear all of the tax imposed by the United States upon whiskey imports. English consumers of cotton must pay higher prices for cotton. On the other hand, U.S. consumers of English whiskey, their

[11] Marshall, *op. cit.*, p. 385, fig. 22.

[12] Or, alternatively, we may assume as do Marshall, Pigou, and Lerner, that the tax is levied and collected in money with the proceeds spent by the government to acquire cotton (or the resources producing cotton). *Cf.* fn. 9 above.

supply being unchanged, pay no more in dollars than before the imposition of the tax.

If, on the other hand, OE has a negative slope within the relevant range, a tax upon whiskey imports will result in the United States getting absolutely more whiskey while giving up absolutely less cotton; and thus the logic of the Mill argument leads to the conclusion that in these circumstances foreign consumers bear an amount greater than the yield of the tax.[13] Yet another possibility, one which Marshall regards as belonging to the "Normal Demand" class of cases, is found where OE (Figure 1) has a positive slope throughout. In this case, Marshall argues that a country cannot shift all of the burden of its import duties upon foreigners, but must in part bear its own import duties. These cases, he analyzes in some detail.[14]

What Mill, Marshall, Edgeworth, Pigou, Lerner, and others have demonstrated by this type of argument is that import duties (and their arguments apply equally to export duties) may shift the terms of trade in favor of the country levying the import duty. By thinking of import duties as levied in kind, they assume that changing the terms of trade favorably to the taxing country is identical with making foreign consumers of exports bear at least a portion of the burden of the tax. Pigou goes so far as to define the foreign burden of import duties along these lines.[15]

But it is not true that import duties are levied in kind; furthermore, it should not be assumed that the government "spends the money" upon exports or their equivalent. Import duties may be and indeed are levied without revenue considerations in mind, and the extra yield may merely mean that other taxes are not increased or the government deficit is smaller (or the surplus larger) than would otherwise be the case. An ideal theory of tax incidence is one which explains who bears the tax under any of the great variety of actual conditions.

In advanced economies, taxes are levied in money, and the explanation of the burden of import duties must be consistent with this fact. Fortunately we need not abandon the reciprocal demand technique even if we recognize that international trade is conducted in terms of money, that import taxes are paid in money, and that a market for foreign exchange exists, provided we are willing to assume, as a simplifying case, a foreign exchange market which is automatically self-adjusting.[16]

[13] Marshall, *op. cit.*, p. 348 and fig. 16, p. 347.

[14] *Ibid.*, pp. 344–345, figs. 13, 14.

[15] Pigou, *op. cit.*, p. 204.

[16] The analysis of this paper will, throughout, be in terms of fluctuating exchanges. This leaves open the question of the determination of the burden of import duties with other types of exchange situations, such as fixed exchanges with gold or other international money flows.

If a freely fluctuating foreign exchange rate is postulated, the reciprocal demand technique can be applied directly as follows: Returning to Figure 1, select any point R on schedule OA and extend perpendiculars to the axes OY and OX, giving points T and S. Thus OS measures the amount of cotton which U.S. cotton producers are willing to export provided that OT quantity of whiskey is obtained in return. U.S. producers are willing to export OS cotton for OT whiskey because the quantity of whiskey OT will sell for the number of dollars necessary to call forth the production and export of OS quantities of cotton. With a freely fluctuating foreign exchange rate, the dollars acquired by British exporters become the dollar income of U.S. cotton exporters. British exporters acquire dollars by selling whiskey in the United States market. They then trade these dollars for pounds. Likewise, and for the same reasons, the pounds acquired by U.S. exporters of cotton become, through the exchange machinery, the pound income of British exporters of whiskey.

The position and shape of an export supply schedule of one country in terms of the import of the other, under the simplifying conditions assumed, depends upon the local demand for the imported item, the local demand for the portion of the exported item retained at home, and the local costs of producing the item. One of these may dominate and determine the shape of a reciprocal demand schedule. If, for example, the English demand for U.S. cotton has an elasticity of unity in terms of pounds, British exporters of whiskey, given their costs and the English demand for whiskey, will export a certain quantity of whiskey regardless of the quantity of cotton imported. There is, in such circumstances, only one quantity of whiskey which they are willing to export for a given number of pounds. By the assumption that the British demand for cotton has an elasticity of unity, the quantity of pounds initially acquired by U.S. exporters of cotton becomes independent of the quantity exported. There is one quantity of whiskey to be exported which, given the state of competition among British whiskey producers, will maximize their income position. In such circumstances the English supply schedule for the exportation of whiskey in terms of cotton can be shown as a line QE perpendicular to OY (Figure 1). If, on the other hand, the dollar demand for English whiskey has an elasticity of unity, the supply schedule of cotton exportation in terms of whiskey may be shown as a line perpendicular to the OX axis (not shown in Figure 1).

If one is willing to make Marshall's assumption that "in the long run" international demands are independent of money (Marshall, *op. cit.*, p. 184), conclusions reached for fluctuating exchanges apply with equal force to fixed exchanges. No such assumption will be made here. An analysis of the effects and burden of import duties in a setting of fixed exchanges will be explored on another occasion.

With any given dollar demand for whiskey, the greater the costs of producing cotton, the less will be the amount of cotton exported for any given amount of whiskey. Thus any increase in the costs of producing cotton, resulting, for example, from the imposition of an export tax in dollars upon the sale of cotton abroad, will shift the supply schedule for cotton in terms of whiskey to the left. For the same reason, any import tax upon whiskey will, by reducing the number of dollars reaching the hands of U.S. exporters of cotton, shift the supply schedule of cotton in terms of whiskey imports to the left. If U.S. production of cotton for export is independent of the dollar price of cotton, as it would be if resources were completely specialized to the production of cotton for export (possibly only for a range), a tax either upon whiskey imports or cotton exports will reduce only the money earnings of resources in cotton production and not affect the supply schedule in any way. Such a schedule is "non-shiftable" and has some importance in the following discussion.[17]

With this background we may now proceed to our main task of isolating the burden of import taxes. We suppose at this stage that the total demand for output is constant in both the United States and England or, in other words, that the national money income (gross and net) is constant. But we specifically do not assume that real income is constant. All products and all productive services are assumed to be competitively priced, which means, among other things, that all markets are continuously cleared and that there is no rationing of buyers or sellers by methods other than price. This means further that we are assuming full employment in the sense that markets for the many varieties of labor services are cleared as well as other markets.[18]

Before any U.S. import tax is imposed upon whiskey, let us consider trade to be already under way and in equilibrium in the sense that the earnings of resources engaged in producing for export in both countries are equal to the earnings of resources employed in industries producing for domestic sale, to the extent that resources have alternative uses. The quantity of cotton exported (per unit of time) sells, let us say, for 1 million pounds in England and the quantity of English whiskey exported sells, say, for 5 million dollars in the United States. All pounds are supposed to be traded for all dollars, giving an exchange rate of \$5 = £1. The trading may be pictured graphically by the use of ordinary demand schedules in Figures 2 and 3. Figure 2 shows the dollar demand

[17] Recriprocal demand schedules, it may be noted, do not require the assumption of constant costs. They may be used with any cost pattern.

[18] I am aware that some Keynesians deny that competitive pricing is a sufficient condition for full employment, but I believe their position to be wrong. The point is too involved to be settled in the present discussion, but the position can be made explicit.

for English whiskey with OM the assumed equilibrium amount of whiskey imports to the United States at the dollar price PM, giving a total of 5 million dollars obtained by English exporters of whiskey. Figure 3 shows the pound demand for U.S. cotton with ON the assumed

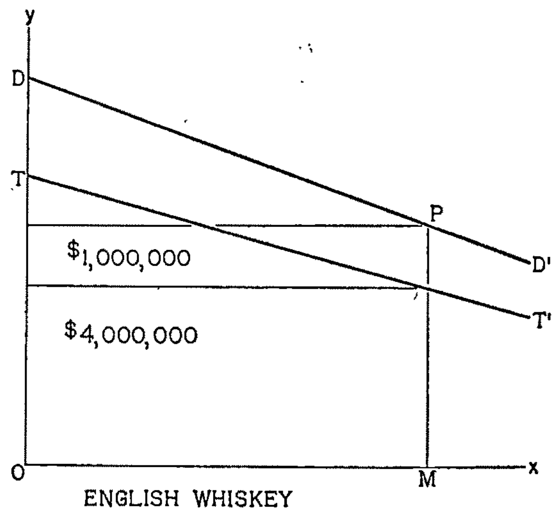

FIGURE 2

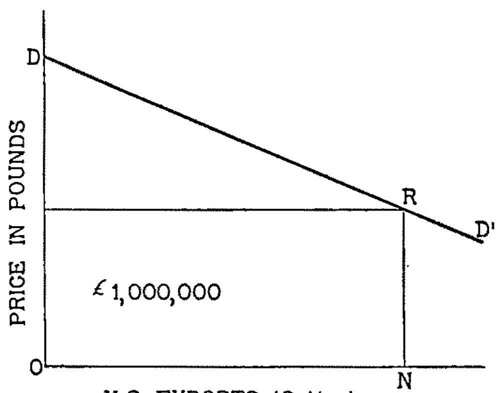

FIGURE 3

equilibrium amount of cotton exports at the pound price RN, giving a total of 1 million pounds. The U.S. cotton producers realize 5 million dollars for the export of ON quantity of cotton and English whiskey producers realize 1 million pounds.

Now let an import tax be imposed of 20 per cent of the value of U.S. imports of whiskey. The line TT′ (Figure 2) is the net demand schedule,

i.e., the dollar price of whiskey to U.S. buyers minus the tax per unit of whiskey.[19]

An *ad valorem* tax is assumed and therefore the net demand schedule TT′ (Figure 2) has the same elasticity as the demand schedule DD′, compared for identical quantities sold. With a tax of 20 per cent of the value of whiskey, the yield of the tax will be 1 million dollars (one-fifth of five million dollars) for the same rate of importation of whiskey. The volume of importation and the dollar price of whiskey may of course change, but the initial task is to discover who has the incentive to change his operations because of the presence of the tax.

The analysis may be most conveniently set forth by a close examination of the following limiting cases: (1) A fixed supply of cotton for export; (2) An English demand for cotton of an elasticity of unity; (3) An English demand for cotton of an elasticity of less than one; (4) An English demand for cotton of an elasticity of more than one.

Case 1. *A fixed supply of cotton for export.*

If the supply of cotton is fixed in terms of whiskey because the supply of cotton is fixed in terms of dollars, resources located in the cotton industry must be perfectly immobile. When the tax is imposed, it will reduce the dollar receipts of English exporters of whiskey by 1 million dollars. English sellers of whiskey may anticipate this outcome and, in an effort to recoup, ship less and thereby obtain a higher dollar price. On the other hand, they may take an experimental attitude and continue to export unchanged amounts, in which case their optimism will be justified. Although immediately they find themselves with 1 million fewer dollars, this is a matter of little concern to them since they calculate their gains and losses in terms of pounds. When British sellers trade 4 million dollars instead of 5 million dollars for pounds (1 million dollars have been paid to the United States Treasury in settlement of import taxes), United States exporters of cotton are clearly the losers. Upon selling pounds, United States exporters of cotton receive 4 million dollars instead of 5 million dollars and hence they lose 1 million dollars in income. As a consequence of the tax, the exchange rate moves from \$5 = £1 to \$4 = £1. Thus we find that the people who are out the money which the Treasury receives are U.S. producers of exported cotton.[20] If, as we have supposed, resources located in the cotton export industry are

[19] This follows Edgeworth's procedure of subtracting the tax from the demand schedule (*Papers*, Vol. II, pp. 68–69). The conventional method of adding taxes to costs is unduly clumsy for present purposes.

[20] This conclusion is consistent with the neo-classical doctrine that import duties are symmetrical with export duties (Lerner, *Economica*, N.S. 3, pp. 306–313). If export taxes yielding one million dollars are supposed, the incidence is precisely the same as stated in the text. In either case, U.S. exporters sacrifice the money which the Treasury receives.

completely tied to this field, resource owners lose precisely what the Treasury gains and they are not in a position to do anything about it.[21] All resources located in the cotton industry receive, as a result of the tax, smaller dollar incomes by the amount of the yield of the tax.

The terms of trade, under the conditions laid down, are unchanged. The quantity of cotton exported, by the nature of the assumptions, remains unchanged. The English exporters of whiskey have no incentive because of the tax to do anything differently. They realize exactly the same price for whiskey in terms of pounds as before the tax, and thus the quantity of whiskey exported to the United States remains unchanged. The dollar price of whiskey is unaffected and therefore the U.S. consumers of whiskey are in no way injured by the presence of the tax. Thus the conclusion seems inescapable that the U.S. exporters of cotton are bearing the full amount of the tax. Pigou's statement to the effect that the foreigner always makes some contribution to the Treasury of the country levying import duties is shown already to be subject to at least this one correction.[22]

Case 2. *Unitary demand by England for cotton.*

In this and in the following cases, we make the more general assumption that resources located in the U.S. export industry are mobile in some degree. From the analysis of Case 1, it seems apparent that, initially, the entire tax burden falls upon the U.S. exporters of cotton, regardless of the elasticity of the demand for whiskey or for cotton. Their earnings decline absolutely and therefore are relatively smaller than the earnings of resources in other fields. Thus an incentive exists for the resources which have other uses to move out of the cotton export industry. As resources move away from the cotton industry, cotton production for export declines, simultaneously raising the pound price of cotton in England. But since in the present case the pound demand for cotton is assumed to have an elasticity of one, the pounds obtained from the sale of the smaller volume of cotton remain unchanged—in our illustration at 1 million pounds. The exchange of dollars for pounds results in whiskey exporters' receiving the same pound price for whiskey as before, and they have therefore no incentive to curtail their sales of whiskey in the U.S. market. It follows that British exporters of whiskey cannot be regarded as making any contribution to the U.S. Treasury. This conclusion holds regardless of the nature of the cost conditions surrounding the production of whiskey in England. Even if factors are specific to whiskey production, and some are almost certain to be, English exporters do not bear any of the tax. It cannot reasonably be argued

[21] Except, of course, political action to get the tax removed.

[22] See p. 789 above.

that U.S. consumers of English whiskey bear any part of the tax. The volume of whiskey imported remains unchanged and with any given demand for whiskey, its dollar price also remains unchanged.[23]

The tax burden in fact falls entirely upon domestic resource owners. U.S. exporters find themselves initially bearing the tax. What would otherwise be a part of their dollar income becomes instead, through the exchange market, the Treasury's tax revenue. With mobility of resources, those located in the cotton industry need not, however, as in Case 1, bear the entire tax burden. They can place part (never all) of the burden upon others through the process of competition. The competition with other resources may merely mean that the existing firms produce more products for domestic consumption and fewer for export. In this event, the effect of the greater production of these domestic commodities will be to reduce their prices and thereby reduce the money income of all other resources engaged in producing these commodities. In addition, resources may shift to other industries in an effort to restore lost earning power and can by increasing the output of these industries reduce the prices and hence the earnings of resources in other fields. The extent to which the tax burden is spread depends upon the degree to which the resources located in the export industry can effectively compete for earnings with resources located elsewhere. In the special and very unlikely case of perfect mobility of all resources, the earnings and the money income of all resources, with any given total demand for all products, will fall by an amount which collectively amounts to the yield of the tax; each owner's distributive share would be proportionately reduced.[24]

The "proof" of the proposition that an import tax is shifted in part "sideways," *i.e.*, to other resource owners, can be presented in simple form if we suppose that resources producing cotton for export are capable of producing one other product, say, peanuts. Suppose a demand schedule for peanuts DD′ (Figure 4) with a current rate of production of OM at the price PM, considered before resources in the cotton industry make any adjustment to the reduction in their money earnings experienced immediately after the imposition of the tax. For the sake of simplicity, we may suppose that firms in the peanut industry are self-sufficient in the sense that they do not buy current output from other firms. In this case, the area ORPM is both the gross and net value product of the peanut industry.[25] Each type of resource in the peanut industry receives the same income per unit of service as its counterpart

[23] The neo-classical view would also, in this case, argue against the conception that domestic consumers bear the tax. See p. 791 above.

[24] In a large country, where exports form a small proportion of total production, a schedule of import duties would reduce earnings per resource by a very small amount.

[25] This ignores depreciation of non-human resources.

in the cotton industry prior to the imposition of the import duty. The disparity of earnings created by the imposition of the import tax results in resources moving from cotton production to peanut production, thus increasing the output and reducing the price of peanuts. At the output OM′ (Figure 4), let us say, earnings in cotton and peanut production per unit of resources of each type are again made equal. Then the area RPTS measures the loss of income to those resources previously entrenched in the peanut industry and measures their share of the tax burden. The area MTP′M′ measures the net income obtained by resource owners previously located in cotton production and now employed in peanut production.

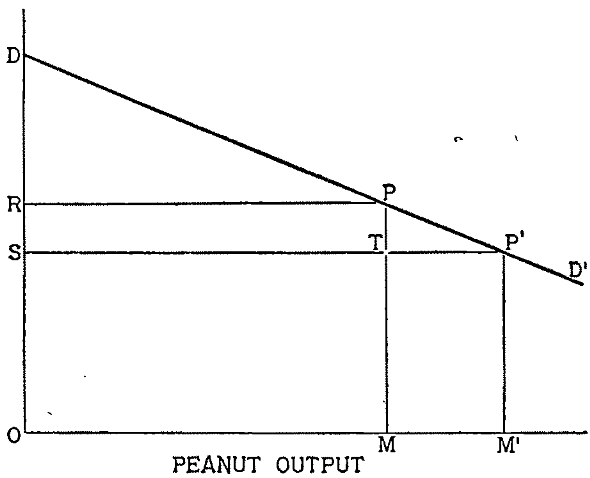

FIGURE 4

If resources located in cotton production are useful in still another industry, the resources located in that industry will share part of the burden and each unit of resource will transfer a smaller percentage of its money earnings to the state in the form of tax yield. In the same manner, the argument can be generalized to cover all degrees of mobility.

As far as the burden of import duties is concerned, it therefore appears to follow that the yield of the tax to the Treasury is borne by owners of resources located in the U.S. export industries and by resources with which they effectively compete. The tax is borne in the form of a reduction in their money earnings.[26] For conditions corre-

[26] The argument in the text does not assume a general deflation of income, either produced or received, in the taxing jurisdiction. It is based upon the assumption that the national net income produced (net value of all output) is unchanged while the tax is imposed. The tax has the effect of diverting (not increasing or decreasing) money income from resource owners to the government or, in other words, the tax yield is transfer income.

sponding to Case 2, the neo-classical argument leads to the conclusion that English consumers bear the entire amount of the tax. In contending instead that U.S. resource owners are bearing the tax, we have not upset the neo-classical argument that, with the assumption of a British demand for U.S. cotton of an elasticity of one, the terms of trade will shift in favor of the United States. Imports of whiskey remain unchanged, whereas exports of cotton decline. Thus it is clear that British consumers, at least those who use cotton goods, are made worse off by the tax. They are worse off, but are they, in any meaningful sense, bearing the tax?

Mill, Marshall, and Pigou would, of course, answer this question affirmatively. For them, the fact that English consumers of U.S. exports are made worse off is sufficient evidence to select them for the rôle of taxpayers. Neither Mill nor the neo-classicists give any argument to show how English buyers of cotton manage, through some devious route, to pay money to the U.S. Treasury. A theory of incidence which points to certain classes of people as "ultimate taxpayers" must be prepared to demonstrate how money payments made by them eventually find their way to the Treasury as tax revenue. In the case of U.S. import duties, English consumers of U.S. exports have no obvious medium in which to make payment, directly or indirectly, to the U.S. Treasury. The pounds which they pay for output become income for British concerns and their employees, and these people in turn make no payments which are of fiscal significance to the U.S. Treasury. English consumers are indeed made worse off; they suffer from the fact that the economy which supplies them must, because of U.S. import duties, employ the same quantity of resources to produce exports while receiving a smaller volume of imports.

If the lack of a medium on the part of English consumers to pay taxes to the U.S. Treasury is not sufficient reason to deny to them the rôle of taxpayers, there is the further and perhaps more important point that all of the tax burden is accounted for domestically. The U.S. export industries and owners of resources located in competing fields lose money income equal to the yield of the tax.[27] A definite medium does exist to get money from them because the Treasury collects the tax at the source which in the case of U.S. export industries is the dollar value of imports.

In real terms, if we look at both U.S. and British consumers together, we find that, although British consumers are worse off in real terms be-

[27] The equality holds because, with a tax yield of 1 million dollars, the firms in the exporting industry together with their employees sacrifice an amount exactly equal to the tax yield before they make any adjustment. As they adjust by moving into the production of other products, what gains they realize must be at the expense of those with whom they compete, keeping in mind that we are holding constant the total of income produced and, hence, the total of incomes received. The point is also discussed above, see p. 799.

cause of the tax, U.S. consumers are better off in real terms. U.S. consumers enjoy the same volume of imports as before the tax and yet obtain the additional products resulting from the employment of resources released from the cotton industry. The gain of U.S. consumers is offset by the loss of British consumers.[28]

Case 3. *Inelastic English demand for cotton.*

In contrast with Case 2, it may now be assumed that the British demand for cotton has an elasticity of less than one within the relevant range. Such a case is represented graphically in Figure 5. OA is the sup-

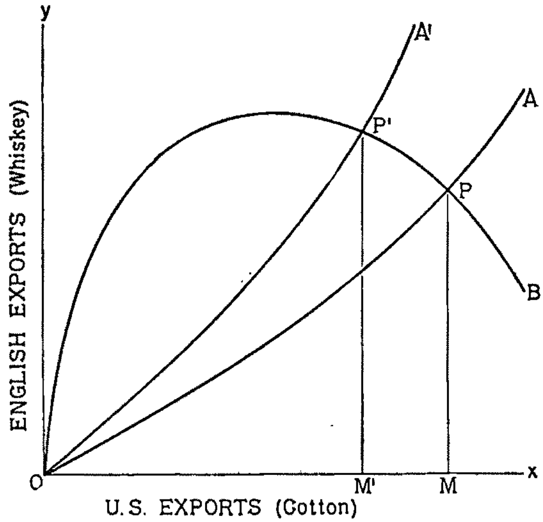

FIGURE 5

ply of cotton for export in terms of whiskey. OB is the English schedule of whiskey exports in terms of cotton, based upon the assumption that, through its relevant range, the demand for cotton in terms of pounds has an elasticity of less than one. OB has a negative slope since, if greater quantities of cotton sell for fewer pounds, British producers to cover their own costs, must export less whiskey. A tax upon imports (whiskey) shifts the United States supply schedule of cotton exports in terms of whiskey imports from OA to OA′. The new equilibrium point P′ shows absolutely larger imports of whiskey as a result of the tax (P′M′ 〉 PM) whereas U.S. exports decline by the amount M′M. If the English

[28] The present view also rescues import tax theory from the assumption that taxes are collected in kind. Even such a strong sympathizer with the neo-classical tradition in international trade as F. W. Taussig finds such assumptions repugnant. (*Cf. International Trade* (New York, 1927), p. 142.)

demand for U.S. products has an elasticity of less than one, a tax upon U.S. imports not only improves the terms of trade for the U.S.; it results in absolutely more imports in return for fewer exports.

In money terms, a U.S. tax upon imports of whiskey will initially (as pointed out before) reduce the earnings of the U.S. cotton industry because the dollars received by the Treasury in payment of duties reduce the dollars obtained by U.S. exporters. As in Case 2, with mobility of resources, production of cotton for export declines, its pound price rises, as does, in this case, the number of pounds obtained from the sale of cotton. Through the foreign exchange market, English whiskey exporters obtain more pounds for the same exports of whiskey. The exchange rate moves first from $5 = £1 to $4 = £1, as the first effect of the tax; subsequently, because the supply of pounds increases, the dollar price of pounds declines still further. Thus the pound equivalent of the dollar price of whiskey again rises. English whiskey exporters now have an incentive to ship more whiskey than before. As shipments increase, with a dollar demand for whiskey of any elasticity of less than infinity, the dollar price of whiskey falls. Thus we have the somewhat astonishing result that a tax upon whiskey lowers the price of whiskey. But this conclusion follows from the premises, and Marshall, although he regarded the case as "exceptional," reaches the same conclusions concerning the *real* effects.[29]

Marshall argues, however, in this case where the elasticity of the foreign demand for a country's products is less than one, that some of the gain from trade resulting from the imposition of tax is obtained by the government levying the tax—a conclusion which follows if one assumes that taxes are collected in kind, but not if one assumes that taxes are collected in money. For even in this case, the initial burden of the tax is thrown upon U.S. exporters by virtue of the fact that tax collectors take dollars away from importers. U.S. exporters of cotton have no way of throwing this burden upon foreign consumers. The best they can do is to force people who own resources similar (competitive) to theirs to share part of the burden. All the real gain accrues to U.S. consumers just as all the real loss accrues to foreign consumers. In terms of money, the U.S. Treasury gains at the expense of U.S. exporters and resources located in industries which compete with the export industries. The rather spectacular change in the real gains from trade resulting in this case should not detract attention from the monetary facts involved.

Case 4. *Elastic English demand for cotton.*

We now pass to the case in which it is supposed that the British pound demand for cotton has an elasticity of more than one. If the U.S.

[29] Marshall, *op. cit.*, p. 348 (top) and fig. 16, p. 347.

demand for British exports is also more than one, this case falls into Marshall's "normal" class of cases. The Mill-Marshall argument leads to the conclusion, in this case, that the tax will fall partly upon the foreign consumers of U.S. products and partly upon domestic consumers of taxed imports. This conclusion, as in other cases, is obtained by the use of reciprocal demand analysis. Returning to Figure 1, let OCE, England's supply schedule of whiskey exports in terms of cotton, have a positive slope throughout. Let OA be the U.S. supply schedule of cotton exports in terms of whiskey before the tax is imposed and OA′ the new schedule after the tax is imposed. It follows that both U. S. exports and imports will decline, but the terms of trade will shift by some amount in favor of the United States. This shift in the terms of trade is the basis for the conclusion that foreign consumers bear the tax.[30]

Translated into prices, the neo-classical argument means that the supply of British exports of whiskey declines and the dollar price of whiskey rises. Hence it is plausible to argue that U.S. consumers of whiskey bear a portion of the tax. Likewise, since the supply of cotton exported to England also declines, the pound price of cotton rises, and hence it may be argued that British consumers of cotton are bearing a part of the tax. But without denying that both groups are made worse off, it can be shown that neither group is bearing the tax.

As noted in connection with Case 1, the tax initially deprives English exporters of dollars, and the smaller number of dollars sold in the foreign exchange market reduces the dollar income of U.S. exporters. An *ad valorem* tax of 20 per cent with 5 million dollars worth of whiskey being currently imported, takes 1 million dollars from U.S. exporters. This reduction in the supply of dollars not only reduces the exchange rate but leaves U.S. cotton producers with one million fewer dollars than they would have received had the Treasury not intercepted this sum. With mobility of resources in cotton production, resources move to other fields, decreasing the output of cotton for export and increasing the output of other things. The prices of these "other things" fall, carrying down with them the incomes of resources previously employed in these industries. In Case 4, as the supply of cotton for export declines, fewer pounds are paid for less cotton (because the elasticity of the demand for cotton in England is assumed to be more than one). The reduction in

[30] N. Kaldor, following Edgeworth, attempts to prove that in the absence of transportation costs and foreign retaliation, import duties will always increase the *real* income of the country imposing the duty ("A Note on Tariffs and the Terms of Trade," *Economica*, N.S. 7 [1940], pp. 377–380). He attempts to draw no conclusions as to the burden of the tax. His argument suffers from the same difficulty as Marshall's, namely the assumption that taxes are collected in kind. But overlooking this difficulty, his argument is not general. It may pay a country to subsidize exports and worsen its real terms of trade. On Mr. Kaldor's diagram (*ibid.*, p. 379), if France's reciprocal demand lies under OF′ before any tax, it would pay France to subsidize exports.

the supply of pounds, through the action of the exchange market, gives us, for the first time, an adjustment which injures British producers of whiskey. The exchange of 4 million dollars for fewer pounds, say £800,000, again alters the exchange rate and worsens the position of British exporters in terms of pounds, and this is what matters to them. They have now an incentive to reduce their exports of whiskey, and if this incentive is accompanied by opportunity, or if, in other words, resources producing whiskey are mobile in England, whiskey exports fall. Accompanying this adjustment, if we assume that the U.S. demand for whiskey is also elastic, the number of dollars paid for whiskey declines.[31] In turn, through the exchange market, U.S. exporters find themselves receiving smaller dollar incomes from exporting as compared with their position immediately after the imposition of the tax. The tax initially worsens the money income position of U.S. exporters, and their adjustment of curtailing cotton exports results in whiskey exporters' receiving fewer pounds. Whiskey exporters therefore curtail whiskey sales in the United States; this reduces the dollar value of U.S. imports, inducing a further reduction of cotton exports; and this again sets in motion interactions making them still worse off. Not only do U.S. producers of cotton lose in dollars by the yield of the tax but in addition they lose by the amount of the decline in the number of dollars paid for the smaller volume of whiskey imports. Shall we say, therefore, they bear more than the burden of the tax?

If real investors and consumers in the United States are prepared to spend a given total amount of money for current output, when current output refers to that portion of the output of the United States and of England which comes into the hands of U.S. buyers, the expenditure of fewer dollars for British whiskey is accompanied by an increase in the demand for those items which are "substitutes" for British whiskey, possibly domestic whiskey or domestic fortified wines.[32] The industries producing these substitutes gain in money income by virtue of the protectionistic character of the duty. What these groups gain in income is equal to that portion of the loss experienced by the industries engaged in exporting which is occasioned by the decline of dollars spent upon

[31] If the U.S. demand for whiskey has an elasticity of less than one, the reduction in whiskey imports will increase the dollars acquired by British sellers and, after exchange for prounds, increase the dollars which cotton producers receive. This improvement acts as a brake upon the movement of resources away from cotton production. The reduction in trade will, therefore, be smaller than in the case discussed in the text.

[32] The term "substitute" is used with some hesitance because of the number of meanings given the relations among commodities. We rely on the rather old-fashioned concept that commodity A is a substitute for B if an increase in the supply (decrease in the price) of A decreases the demand for B when tastes of consumers, income predictions of investors, and the money they have to spend are given. This definition does *not* assume real income to be constant (*cf.* J. R. Hicks, *Value and Capital* [Oxford, 1939], p. 44).

British imports. The amount of income shifted away from U.S. exporting industries to industries producing items which are substitutes for imports is the gain realized by pressure groups favoring protection on the theory that their products are competitive with imports.[33] Where shall we say the burden of the tax rests in Case 4? From the point of view of those owners of resources located in the cotton industry and of the resources located in industries competing on the supply side with cotton production, their total loss of income is the yield of the tax plus the reduction in the number of dollars spent upon whiskey. But the incidence of a tax cannot be greater than the yield of a tax.[34] Part of the loss of these groups is offset by the gain of the producers of substitutes for imports. The remaining portion of their loss of income is offset only by the yield of the tax to the United States Treasury. Only this portion is the incidence of the tax.

III

Thus far, we have restricted our analysis to two countries trading two items. To obtain greater generality, we may now consider the circumstance of a large number of imports and exports. The conclusions already reached for two commodities apply, with a few qualifications, to any number of imports and exports.

With many imports and exports Case 1 offers no great difficulties. For the conditions of Case 1 to be satisfied, the resources employed producing all U.S. exports must have no relevant alternative uses other than the production of other exports. Immobility of resources need not now be assumed with respect to any one item exported. Mobility of resources as among classes of exports may be perfect. Case 1 requires only

[33] In my opinion, a duty should be classed as protectionistic in the case of a uniform duty on all imports where the duty positively curtails imports, which in turn occurs only if the conditions set forth in Case 4 are satisfied. In Cases 1, 2, and 3, the duty does not curtail imports and therefore gives no protection. In Cases 1 and 2, domestic industries are exposed to the same amount of competition from abroad as in the case of no duty and in Case 3 because imports increase, they are exposed to more! Only in Case 4 is there any "protection" to domestic industries producing substitutes for imports; and even in this case the neo-classical argument gives support to duties, judged from a nationalistic bias, in spite of, rather than because of, the protection given. The neo-classical argument rests upon the possibility of one country's exploiting another in real terms and the real gain decreases to the extent that a tariff restricts imports.

[34] The concept of incidence has yet to be given a definitive meaning in tax theory. As the term is used here, it is tied to the concept of a tax yield in the sense that a tax which has no yield has no incidence. This is not to deny or gloss over the effects of a tax. The federal tax on colored oleomargarine is a case where effects are much more important than incidence. The production and sale of colored oleomargarine is practically negligible. Such a tax has almost a zero burden because the effect of the tax has been to prevent the production of colored margarine. This does not deny that the public is made worse off by being forced to accept an inferior product—uncolored margarine.

that mobility as between production of items for export and the production of items for domestic sale be zero.

If, as before, we suppose a 20 per cent *ad valorem* tax upon the value of all imports in a setting where, before the tax, the value of imports is, say, 5 billion dollars and the value of exports, say 1 billion pounds, the yield of the tax in the first instance is now 1 billion dollars ($\frac{1}{5}$of 5 billion dollars) to the United States Treasury. By taxing imports, the Treasury takes 1 billion dollars out of the hands of British sellers, who therefore have 4 instead of 5 billion dollars to sell in exchange for pounds. As before, U.S. exporters find themselves receiving 4 instead of 5 billion dollars, or, in other words, their money incomes from exporting fall by one-fifth. The dollar price of exports declines, likewise, by one-fifth and the exchange rate moves from $5 = £1 to $4 = £1 as before.

The answer to the question of who bears the tax is, therefore, clear. Owners of those resources located in the export industries bear the tax in the form of a reduction in their money earnings. They sacrifice money income exactly equal to the yield of the tax to the Treasury and because, by assumption, they are tied to the exporting industries, there is nothing they can do to shift even part of the burden to other groups.

The tax leaves British exporters where it found them, and they have no incentive, because of the tax, to alter the quantities of their exports or the kinds of exports. U.S. consumers of British exports are likewise unaffected as indeed are British consumers of U.S. exports. The allocation effect of the tax is zero, and the reduction in the money incomes of the export industries and the gain of the Treasury of tax yield are the only consequences of the tax.

There are greater difficulties, however, in generalizing the theory as applied to many imports and exports when we come to Cases 2, 3, and 4. These cases are classifications depending upon the elasticity of the British demand for U.S. exports. The main difficulty is the meaning to be given the concept of a demand schedule and hence of its elasticity when referring to many items instead of to one item. What is the meaning of the proposition that the English demand for U.S. exports in general has, for example, an elasticity of unity?

If the relative quantities of U.S. exports shipped abroad could be taken as constant, exports could be treated as units of a composite commodity and elasticity of demand would then have the same meaning as in the case of one commodity. Such an assumption involves a recourse to Marshall's "bales" of exports and imports.[35] A "bale" may be regarded as a unit of a composite commodity, or, it may be treated as a fixed "dose" of resources—land, labor, and capital. But the latter treatment

[35] Marshall, *op. cit.*, p. 157.

has little to recommend it. It involves, among other things, the assumption of perfect mobility of all resources, an assumption which even when restricted to "the long run" seriously limits the generality of conclusions based upon it.[36]

A typical feature of economies is variability in the degree of mobility of various types of resources producing output, and it may be better to develop the analysis upon this assumption at the beginning. The initial loss of income by the U.S. export industries, because of the tax, is almost certain to react differently upon the various commodities exported. In some lines of production perhaps no curtailment of exports at all will occur because of a dogged persistence in producing and exporting certain types of products almost regardless of earnings—a situation which sometimes characterizes certain lines of agriculture. On the other hand, many products which are sold both abroad and at home are sensitive on that account alone to variation in the export price, and in addition some resources are shifted out of the export industries altogether as a result of even small declines in earnings. Under the impact of a reduction in earnings in the U.S. export industries as a result of import duties, the composition of U.S. exports is almost certain to change, and, therefore, a "bale" of exports will change in content.[37]

It might be possible, by the use of detailed assumptions, to determine definitely the change in the composition of U.S. exports under the pressure of an initial reduction of the earnings of the resources producing them. Perhaps it is sufficient for present purposes to know that some, possibly all, exports will decline in such circumstances. The size of the reduction is governed by the pound demand elasticity of the particular product (in the sense that the less the elasticity, the less the reduction), by the elasticity of the U.S. demand, if any, for exportable products, and, finally, by the degree of mobility of resources engaged in the production of the particular product.

Whatever the extent of the reduction of particular types of exports, we shall mean that the British demand for U.S. exports has an elasticity of unity (Case 2) if the pounds expended for the new and "smaller" volume of U.S. exports remains unchanged. In that event, the adjustment of the U.S. export industries to a decline in their earnings will not change the number of pounds they obtain and, therefore, when

[36] Professor Pigou analyzes the implications of Marshall's "bale" concept in his customarily masterful fashion. *Cf. A Study*, p. 200.

[37] Professor Jacob Viner strongly defends Marshall's use of the concept of "bales" against the criticism that a "bale" changes in content and is therefore not a useful concept. He cites, quite properly, the parallel difficulty in the construction of index numbers, which we use even though the composite commodity priced either changes in content or if kept constant will, almost never, be typical for all periods compared. (*Cf. Studies in the Theory of International Trade* [1937], pp. 553–555.)

sold in the foreign exchange market, will not change the number of pounds received by British exporters. The "terms of trade," in so far as this concept can be given meaning, change in favor of the United States, leaving British consumers worse off and American consumers better off. The burden of the tax is determined as already discussed, and the proposition that the tax is borne domestically holds here, as well as in the case of one import and one export.

Case 3 now means that as U.S. exports decline, the British spend more pounds for the new and "smaller" volume of U.S. products. British exporters now have an incentive to ship us more goods than before, and the terms of trade turn absolutely in favor of the United States. Their incentive to ship us more products will, to be sure, alter the composition of U.S. imports. The quantities of some imports are almost certain to increase more than others, especially those which have an elastic demand in England for home use, or an elastic demand in dollars in the United States, or whose production can be readily augmented because resources capable of producing them are highly mobile. With these qualifications, the conclusions reached for the simpler case apply here with equal force.

Case 4, of course, means that as U.S. exports decline, the British spend fewer pounds for the new and "smaller" volume of imports. In this event, trade will decline on both sides. British exports, as well as U.S. exports, will change in composition for the same reasons and in the same way as noted in connection with U.S. exports. There are no reasons to change the conclusions reached for this case with respect to the burden of import duties already noted in connection with only one import and one export.

IV

In a formally complete theory of the incidence of import duties, it would be proper to analyze import duties levied at different rates on various classes of imports. Such cases offer somewhat greater complexities than can be conveniently included in the present discussion. Some suggestions pointing to the conclusion to which the present analysis leads may nevertheless be appropriate.

A tariff schedule of varying rates will in general have two classes of effects. Such a schedule reduces the profitability of the exporting industries of the country levying the duty just as in the case of uniform rates and for the same reasons. In addition, such schedules alter, possibly quite drastically, the *composition* of imports for any given volume of U.S. exports. Imports subject to high duties will decline, whereas imports subject to low or no duties will increase. Differential rates take foreign exchange from foreign producers of items subject to high rates and give an equal sum to the foreign producers of commodities

subject to low duties. This change in earnings is accompanied by corresponding changes in the relative quantities of various types of imports. This is the *composition* effect of differential rates upon imports.

The absolute curtailment of imports, to the extent that such a concept can be given meaning with changes in the composition of imports, will in turn depend initially upon what the U.S. export industries do when faced with a loss of earning power because of import taxes. If these industries do nothing, as in Case 1, the composition effect is the only effect, and the export industries are left bearing the taxes indefinitely. If U.S. exports fall, the tax burden is spread to competing resources. If the foreign demand for U.S. exports has an elasticity of unity (Case 2), the "volume" of imports remains unchanged and the composition effect is again the only effect. If the foreign demand for U.S. products has an elasticity of less than one (Case 3), the "volume" of imports increases accompanied by a change in the composition of imports. If the foreign demand has an elasticity of more than one (Case 4), trade will decline on both sides, with a change in the composition of both imports and exports, the pattern of imports changing however more severely than that of exports. In all cases, U.S. producers of exports and the owners of resources in competing fields suffer a loss of income at least equal to the yield of the tax to the Treasury. In no case do either foreign consumers or producers bear the tax. Even in this case domestic consumers of taxed items do not bear the tax. Domestic resource owners bear the full yield of the tax. These conclusions can be demonstrated, rigorously, for the general case of fluctuating exchanges.

The conclusions reached in the foregoing remarks have employed the assumption that the only transactions in foreign exchange arise out of trade. This assumption was made for purposes of simplicity and may be dropped without affecting the conclusions. If part of the dollars supplied in the foreign exchange market arise from the purchase of securities from foreigners or in settlement of interest or dividend payments to foreign owners of claims to property located in the United States, it follows that the dollars appropriated by the Treasury from importers will, on that account, reduce the earnings of resources in the U.S. export industries. Adjustments in trade start from this fact. The pattern of adjustment is the same with such transactions, with modifications in detail.

We have yet to meet and grapple with the bugaboo of contemporary incidence theory, namely, "how the government spends the tax proceeds." It was once possible for Edgeworth to argue that in "pure theory," the discovery of the incidence of taxes can be taken as independent of how the government spends the money.[38] But this point of

[38] *Papers*, Vol. II, p. 70.

view has been under attack by M. Slade Kendrick, Alfred Buehler, and many others.[39] There is the further difficulty, as far as incidence theory is concerned, that the neo-classical treatment of import duties is inconsistent with its treatment of other taxes with respect to the relevance of government expenditures. For income, commodity, or property taxes Pigou and Edgeworth carry on the analysis in a setting in which government expenditures are treated as given; but in the case of import (and export) taxes, a functional relation is supposed between the yield of the tax and government expenditures. To argue, as we shall, that government expenditures should be treated as given for tax incidence purposes means that we must not only take issue with contemporary critics of neo-classical tax theory but as far as import duties are concerned, with the neo-classicists themselves.

The protest against treating taxes and their burden as independent of government expenditures appears to involve the notion that governments spend because they tax. This conception supposes that government expenditures depend upon current government revenue. The case for treating expenditures as functionally tied to tax yields appears strongest in the case where taxes are "earmarked" to government expenditures, a common practice of state and local governments in the United States. In such instances, it may be argued that the government functions are performed because of the earmarked revenue. Where no earmarking as such occurs, it may nevertheless be argued that "how the government spends the tax proceeds" makes a difference in the determination of the incidence of the tax in question.

Those who criticize the old-fashioned procedure of taking government expenditures for granted in analyzing the incidence of particular taxes appear to have something more in mind than merely the proposition that government demands as well as private demands should be recognized. Rather it is an insistence that government demands are, in some sense, functionally dependent upon tax yields. This is the application to governments of the concept of a "propensity to spend," which suggests that tax receipts supply the wherewithal to make expenditures. In my opinion, this point of view has little to recommend it. Tax receipts are for governments one of several methods used to restore cash balances depleted as a result of making expenditures or of subsidizing some members of the community. At any given moment in the economic history of a community, governments make expenditures out of cash balances, the size of which is explained by what has gone before. A government cannot very well spend tax revenue simultaneously accruing to it unless one is prepared to make the wholly unreal assumption of continuous and

[39] See references cited in fn. 9 above.

perfect coincidence of expenditures and receipts.[40] If one speaks of causation, one might say that governments tax because they spend rather than the reverse. But even such a position must be qualified by the fact that tax yields constitute only one of several methods of restoring cash balances, such as selling debt, obtaining income from state-owned property, selling goods or services, receiving gifts, and, in the case of a sovereign government, the very important power of creating money.

The explanation of the direction and amount of government expenditure should not be conceived as mechanically governed by tax revenue past, present, or future, or even as functionally related to the size of the government's cash position. The decisions of governments to spend money are political decisions. Why governments do what they do must be explained along political lines. Such a theory must explain how, in political democracies, legislative bodies reach the decisions they do and how administrative agencies choose to interpret such instructions. For purposes of systematic economic thinking, the decisions of governments to spend money should be taken as given. The "tastes" of governments are what they are. This means that government expenditures are to be regarded as independent of tax revenues, in fact and in theory.[41]

The treatment of taxes as independent of government expenditures does not mean that the latter are ignored or in any way overlooked. Governments spend money to acquire current output, as well as for other purposes, and their dollars count just as do the dollars spent by private consumers or real investors. Government demands are a part of the total demand for output, and to overlook the fact would indeed give false results. Government expenditures upon output plus private expenditures upon output give the gross value of output, which after deduction of the value of what is used up during the period, gives the

[40] Such an assumption, *i.e.*, continuous simultaneity between receipts and expenditures, means that governments could successfully keep their cash balance at zero at all times, and if the same is true of all budgeting units in the society, one dollar could do the work of 100 billion or, in other words, velocity could be infinite. *Cf.* Howard S. Ellis, "Some Fundamentals in the Theory of Velocity," *Quart. Jour. Econ.*, Vol. 52, No. 3 (May, 1938), pp. 431–472.

[41] Even in cases where revenues are "earmarked," it is not proper, in my opinion, to suppose that the expenditure is made because of the earmarking. M. Slade Kendrick is one who argues that the burden of the gasoline tax should be, because of the common practice of earmarking, regarded as functionally related to government expenditures on roads (See fn. 9 above). It is fair to ask Mr. Kendrick whether it is reasonable to suppose that if, for some reason, gasoline taxes had not been feasible, the present road system of the United States would not have been built. Automobile associations and kindred spirts no doubt would have induced legislatures to appropriate money for road construction and maintenance in any event. The practice of earmarking revenue is a political device urged by pressure groups wishing to see certain types of expenditures continued, and it has the advantage from their point of view that, once accomplished, it more or less excludes the expenditures in question from periodic legislative examination. Because it is a political device, it should not, in my opinion, be taken seriously for purposes of determining tax burden.

net value of output. Taxation comes into the picture, as far as its revenue aspects are concerned, by forcing a diversion of money income from individuals and groups on the one hand to the government on the other. In this view, all tax revenue is "transfer" income and should be so treated.

We may now apply this point of view to the main question in hand, namely, the determination of the burden of import duties. Reciprocal demand schedules, if employed in this problem, should be constructed to reflect government demands for whatever products it is currently buying. These products may be imports, potential exports, products which compete for resources with exported products, or products which are independent of exported products. Reciprocal demand schedules therefore reflect the facts as to government demands just as they must reflect the facts of private demands. We need not assume these demands, whether public or private, as fixed for all time.

A main difficulty of the neo-classical theory of import duties is its unfortunate assumption of a functional relation between the yield of import duties and government expenditures.

Ordinarily in analyzing taxes, the neo-classicists followed the procedure of treating government expenditures as given. Their failure to follow the same procedure in the case of import (and export) taxes is the explanation for their improper theory of incidence in this case. The assumption that the government collects taxes in kind immediately precludes obtaining a general answer to the question of what people bear the tax. Perhaps Edgeworth's troubles with the symmetry problem concerning import and export taxes is traceable to his uneasiness over this assumption. In any event, by breaking with the assumption of a functional relation between tax yields and government expenditures, we obtain a general theory of the burden of import duties—general, in the sense that the theory holds regardless of how governments and individuals decide to spend their money.

COMPULSORY LICENSING OF PATENTS

By RICHARD REIK*

The post-war reform of the American patent system, which is highly important for the whole future of industrial development, concerns the people in their entirety and should therefore interest the whole nation. In the following essay, an attempt is made fundamentally to analyze the principal questions involved while having proper regard to the legislation and jurisdiction of foreign countries.

I. *Compulsory Licensing Legislation*

The base of the patent systems throughout the world is the principle of conferring on the inventor the absolute right of excluding others, during the lifetime of the patent, from in any way practicing the patented invention. This right of exclusive exploitation of the invention is granted to the inventors for the purpose of encouraging inventive activity and of furthering the development of the inventions, tending, however, by all means toward the ultimate end of promoting the general welfare; the reward to the inventor is no more than a fair and agreeable method to attain that final result.

In industrial countries another dominant consideration is to assure the early disclosure of the invention to the public. Especially the patent systems of the United States and Great Britain are based on the theory of getting information, for in order to obtain a valid patent, the inventor must fully disclose the secret. This is a crucial requisite for the benefit of society as a whole, since all knowledge divulged by the patent is open to public use when once the patent has expired. (Authoritative German experts admit that, in order to understand the essence, the "real meat," of the invention described in a German patent specification, it is often necessary to consult with the corresponding United States or British specifications.) Moreover, conferring the exclusive right on the patentee fulfills still another purpose that exclusively serves to the interest of the public, in forcing the industry to carry on research work tirelessly, for fear of being anticipated by another inventor which would exclude competitors for seventeen years from the newly opened domain. This function of the patent system is recognized as its primary justification from the viewpoint of public policy because of promoting industrial progress more than anything else.

Such personal monopolies vested in owners of patents are bound to

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produce incisive restriction of the franchise of the public, but in view of the enormous value of the patent systems for industrial progress this drawback has to be put up with. Yet, on the other hand, the patent systems of all the industrially important countries take the necessity into account of providing some exceptional legal remedy, as a corrective to the absolute rights granted to patentees, for the purpose of redressing the balance of conflicting interests of the patentee and the public in case special conditions should occur which render this necessary. The chief remedy for executing this task without departing from the basic principles of the patent system consists in empowering the authorities to permit others individually to use the patented invention without the consent of the patentee, in exchange for paying appropriate royalties. This legal remedy is called "compulsory licensing."

Opposition to Compulsory Licensing in the United States

In this country the requirement of compulsory licensing of patents has been a bitterly controversial issue for a long time. Congress was asked as early as 1877, and frequently since, to adopt a system of that kind, but none of the numerous bills proposed has matured into law. The questions involved were given consideration in the Oldfield hearings in 1912 and 1914, and repeatedly since, most intensively in the hearings before the Temporary National Economic Committee that was created upon the message of April, 1938, to the Congress from President Franklin D. Roosevelt. The overwhelming body of the ample testimony adduced by the interrogation of leaders of American industry and of other experts on those hearings was opposed to legislation of such a kind which is considered to be repugnant to the spirit of American jurisprudence and, in particular, detrimental to the patent system.

In spite of the bills recommended since 1912 half a dozen times in Congress and the extensive discussion of these bills, the problem has not come one step nearer to its solution. By inquiring thoroughly into the "imposing array of arguments and authorities" antagonistic to compulsory licensing, it is found that the general opposition, although erring on principle, was essentially justified because none of the motions made was actually answering the purpose. Still, it will be shown that there exists a simple kind of compulsory licensing provision which may safely be relied on to guide the jurisdiction, giving the public its due without unduly detracting from the exclusive rights of the patentee. The rule in question has been practiced abroad during a quarter of a century. Neither big concerns, nor small businesses, nor independent inventors have ever had the least reason to complain of the jurisdictional practice under that simple rule of law.

To make the problem clearly understood before turning to the said

solution of the problem, a few supplementary explanations will be made about the history of the foreign legislation and jurisdiction on the subject.

Provisions Against Non-Working of Patented Inventions

If a patented invention is worked abroad exclusively and the wants of the country where the patent has been granted are continually supplied by importation, this means the exclusion of all would-be competitors at home, and at the same time the building-up of the industry in a foreign country. That is doubtless not the final aim of the patent system, to say the least of it.

There is no need of the supplementary doctrine, developed by the German jurist and philosopher Josef Kohler, that obtaining a patent involves the social duty of the patentee to work the patented invention for the national benefit: using the domestic patent to prevent the development of a domestic industry is undoubtedly a cardinal abuse of the privilege accorded by the patent monopoly. For this reason practically all foreign countries have or had a compulsory working clause in their laws, which means some compulsory measure to enforce the working of the patented invention within the patent country.

The obligatory working clauses in the patent laws throughout the world may be grouped under three heads.

In some countries, including Germany, up to 1911, the penalty for non-working an invention within a prescribed period of time after the grant of the patent was, or still is, annulment or revocation of the patent. Yet, events have shown that the risk of losing the patent did not bring any practical result at all. In general, the patentees tend to produce in the countries where costs of production are lowest, and to supply the markets of the other countries from there ready rather to venture the forfeiture of the patent. The experience of many years of foreign countries indicates an extremely small use of compulsory working action. In Germany, revocation of a patent on the ground of non-working has only been asked for in a solitary case all the time up to 1929. In general, the compulsory clauses have definitely proved inadequate to realize the intention of the legislators to promote domestic industrial activity. The only effect of such clauses was, and still is nowadays, to cause annoyance to foreigners, and apprehension even more than annoyance, thereby preventing them from filing foreign applications which otherwise would have been filed and possibly exploited, and at least delaying the obtaining of information from abroad. This is the reason why, by the patent laws of another group of countries, the authorities are given the power to permit, after the lapse of a specified period of time, the patented invention to be used by a third party

upon payment of an adequate compensation to the patentee, if the latter fails to work the invention in the patent country; and there are still other countries the laws of which provide that interested parties may petition for a compulsory license or for revocation of the patent alternatively.

Thus, the original function of the compulsory licensing clauses was to replace the compulsory working provisions by a more efficient legal remedy. It appears, of course, to be the most logical corrective for someone who is not prepared to work the patented invention in the patent country, or is incapable of doing so, to be compelled to make the invention available, on a royalty basis, to others who petition for the permission to use it. Yet the experiences of foreign countries indicate an exceedingly small measure of success not only with revocation but also with compulsory license provisions as legal measures for the purpose of promoting domestic activity.

Remedies Against Suppression of "Dependent" Inventions

Thus far the compulsory licensing legislation has proved an undeniable failure. However, the affair took an unexpected turn in several countries, including Germany, where the legal remedy got quite another function through assuming the highly important rôle of intervening, to the benefit of the public, between conflicting inventions. A given patent may cover an invention which is dependent on a previously patented invention inasmuch as said invention cannot be applied industrially without using the earlier invention, that is to say, without infringing the prior patent. In this state of affairs, the owner of the prior patent has the power to prevent the working of the dependent invention by denying the request for a license, being, of course, likewise prevented from using the later invention without a license under the subsequent patent. The later inventor has then no other choice than to await the expiration of the prior patent or to submit to all conditions of its owner. Here is in fact a category of so-to-speak "suppressed" inventions.

Those consequences are legitimately resulting from the patent system. There are, however, special circumstances in which this situation becomes prejudicial to the interests of the public. The dependent invention may, for instance, be very important, whereas the invention covered by the prior patent made only an insignificant or no practical contribution at all to industrial progress. Under such conditions it is not justifiable from the viewpoint of the general benefit to leave the control over the dependent invention to the prior inventor unconditionally for the whole lifetime of his patent.

This is, moreover, by no means a singular case, but a typical representative of a group of cases of the same or of a closely related nature, the characteristic feature of which class of cases consists in the condition that the use of a previously patented invention by others than the patentee reveals itself in the course of time as an urgent need of the public. Accidentally the facts of the case may be such that it is the domestic use of a patented invention which is not being industrially applied at all or only being worked abroad, that is imperatively demanded to the general benefit.

Other Grounds for Compulsory Licensing

But non-working is not the only reason for compulsory licensing legislation and does not justify such legislation by itself. Moreover, the grant of a compulsory license in consequence of non-working is by no means the legal case which most frequently occurs and most urgently calls for redress, but is in fact only one specific case out of a more comprehensive class having the common attribute that the immediate need of the nation outweighs the absolute right of the patentee to exclude all others from in any way utilizing the patented invention throughout the lifetime of the patent.

To the best of my knowledge, the Austrian patent law of 1897 was the first to consider such anomalous circumstances in the legislation. According to the first paragraph of Section 21 of that law, the owner of a patent, covering an invention that cannot be carried into practice without the utilization of a previously patented invention, shall be entitled to ask the owner of the prior patent for a license at any time after the expiration of three years from the publication of the patent in the *Official Gazette*, on condition that the said later invention is of considerable industrial importance. Paragraph 2 of Section 21 provides that on granting the license asked for, the owner of the prior patent shall reciprocally be entitled to obtain a license from the owner of the later patent. Furthernore, apart from this exchange of licenses between owners of patents that are correlated in the specified manner, the Austrian patent law provides in the third paragraph of Section 21, that any trustworthy party may apply for a license, even in the absence of the specific prerequisite according to paragraph 1, on condition that the grant of the permission to use the invention to others than the patentee *seems necessary in the public interest.* If the patentee refuses to grant the license, in all those cases, a compulsory license shall be granted to the petitioner by the Patent Office, upon adequate compensation and security, on such terms as are thought expedient (paragraph 4 of Section 21).

The provisions according to paragraph 1 of Section 21 of the Austrian

law of 1897 has been adopted in Norway and Poland; provisions substantially corresponding to those of both the paragraphs 1 and 2 have been entered into the patent laws of Bulgaria, Greece and Italy; the whole compulsory licensing clause of the Austrian law, including the license in the public interest according to the third paragraph, was incorporated into the Swiss law of 1897 by the Supplementary Acts of 1926 or 1928. Here the jurisdiction is given to the courts.

Compulsory Licensing in Germany

By the German Act of 1911, the legal remedy provided in Section 21 of the Austrian law of 1897 has been adopted in a more general and thereby simplified form.

In abolishing the working clause of the first German patent law of 1877 (which was retained in the Supplementary Law of 1891), the following compulsory license clause was introduced into the Act of 1911 as the first paragraph of Section 11: "If the patentee refuses to grant a license for using the invention to another who offers to pay an adequate compensation and to give adequate security, the permission to use the invention may be conferred on said other party by adjudication (compulsory license) if such permission seems necessary to the public interest. The granted license may be limited or subject to special conditions."

The second paragraph of Section 11 deals with the revocation of the patent. Yet no patent can now be revoked for the single reason that the patented invention is not being worked in Germany; revocation is reserved to cases in which the patentee, while omitting to work the patented invention in Germany, did put it in practice, exclusively or mainly, outside the Reich and its possessions. The practical meaning of the provision is next to nothing: since 1911 only one application asking for the revocation of a patent has been made.

Jurisdiction was given to the Patent Office whose decisions were subject to an appeal to the Supreme Court (Deutsches Reichgericht). The compulsory licensing provision was revised under the nazi regime by the Act of 1936 where it appears as Section 15. The changes made have no bearing on the questions here being discussed. The only modification as to the substance consists in that the authorities appointed to give the decision on whether or not a compulsory license has to be granted (Patent Office and Reichsgericht, respectively) were no longer competent to judge of the preliminary question as to whether the public interest is at stake. Those authorities were bound to grant the license if the government of the Reich, which had to be consulted in each particular case, declared that this was necessary for protecting the general good. That declaration was not appealable. It is evident that this change ordered by a totalitarian government is not worthy to be followed.

Determination of the Public Interest

That system of obligatory licenses in the public interest has been applied in Germany without inconvenience since 1911.

Though the language of Section 11 lacks distinctness in this respect, it was well settled in the German jurisdiction that the decision as to the grant of the compulsory license is not left to the arbitrary discretion of the authorities: they must consider whether the public interest demands the grant of the license and, if the answer is affirmative, they are obliged to grant it. It is also generally accepted that only a non-exclusive license is to be conferred on petitioners under the compulsory licensing clause. By a decision of the Supreme Court of Germany the rule has clearly been established that the grant or denial of a compulsory license shall not be used for political purposes or result from political considerations.

A decision passed in 1934 by the Supreme Court of Patent Appeals of Austria states generally that the granting of a compulsory license is not excluded by the fact that the applicant has a private interest in getting it; but, besides this, such granting must satisfy a public want. German decisions formulate the same thesis by saying that the compulsory license is not devoted to satisfying private requirements of competitors, but destined to serve the public welfare.

Before now going into individual cases, it is to be noticed that there are no basic differences between the judgments passed under Section 11 of the Act of 1911 and those passed under Section 15 of the patent law of 1936, or between the judgments given before and after 1933, respectively. This gives evidence of the reliability of the exceedingly simple legal definition of compulsory licensing in the German patent law. Even in the time of vast judicial disorder existing after 1933 the single determinant "in the public interest" continued to serve as an imperturbable compass bar.

The existence of the public interest has generally been affirmed if the domestic demand for a patented article was not being met to an adequate extent. However, it is held that this applies only to cases in which a serious need of the public had remained unfulfilled; there is, consequently, no legitimate claim to compulsory license in cases concerned with fancy articles, such as finery, jewelry, toys and the like.

In detail, the following reasons for granting a compulsory license have been admitted by German decisions (the figures in parentheses indicate the year of issuance):

Improving the reliability of operation (1927); or safety of traffic (1934); or safety of workmen (1919, 1926, 1928); promotion of public health (1929, 1935); reduction of cost of vital goods (1930); improved provision of the domestic market (1918); prevention of shutdowns of

plants (1926, 1931, 1934); improvement of the balance of trade through promotion of the export business (1923, 1928, 1934, 1935).

Still in most cases the matter stands thus that the petitioner owns a patent which cannot be practiced without infringing a prior patent, and which therefore is doomed to lie dormant if the owner of that prior patent refuses to give the later inventor a license. This is the class of the "dependent" inventions.

In these cases that occur most frequently, the judgment is being formed in carefully weighing against each other the progressional value of the two inventions involved. It is obvious that a trifle of a modification or even an unimportant improvement of the first invention should not enable the second inventor to obtain a compulsory license. Neither should the owner of the master patent be empowered to suppress a subsequent invention of much higher importance throughout the whole lifetime of his patent. A decision of the German Supreme Court, given on January 6, 1916, hit the nail on the head in stating: "Intolerable is the situation that two patentees should be permitted to prevent each other and the public from using a valuable invention." Hence it is to be seen that also under such circumstances, just as in the cases that have been dealt with above, it is the conflict of the absolute right of the patentee with the demands of the public that decides the matter.

According to the state of the jurisdictional practice and the theory in Germany, there is no chance whatever of getting a compulsory license by simply relying on the fact that the later patent is useless unless the master patent will expire or its owner will be compelled to permit the use of his invention to the later inventor. In every single case it must carefully be examined whether the industrial application of the dependent invention is seriously requested for the common good. On the other hand, it is by no means a *sine qua non* that the later invention is protected by patent; the same conditions apply in cases where the dependent invention is not patented.

Sample Decisions on License Applications in the Interest of "Dependent" Inventions

All along since 1911, the Reichspatentamt and the Reichsgericht have applied those doctrines in a considerable number of decisions, partly granting compulsory licenses, partly dismissing the applications. The following special cases are being adduced to illustrate the nature of the diagnosis reached by using the public interest as an indicant for drawing the line between restrictions to be accepted as legitimate consequences of the patent system, and those calling for redress because of provoking, sometimes through incidental circumstances, an intolerable restraint of the public.

1. *Typewriter.* The Reichspatentamt rejected the application for a compulsory license, arguing that the patent sued on was of fundamental importance while applicant's patent was held to cover only a trivial modification of the previously patented invention; the Reichsgericht reversed the decision without inquiring into that question, but relying on the fact that, as a consequence of the war, the domestic demand for the patented article could not resonably be met by the owner of the prior patent, an American firm, who nevertheless refused the grant of a license (1918).

2. *Production of Oxygen.* The petitioner was held to have offered to the industry a new practical device producing oxygen with the recovery of argon as a by-product; the industrial application of said device was barred by a prior patent. The second invention was considered to be of considerable value for the public and a compulsory license, therefore, granted (1916).

3. *Cement Kiln.* A previously patented grate was prohibiting the carrying into practice of the new construction. An advance over the prior art was acknowledged which was held to be important for the public inasmuch as a reduction of the stress exerted on the furnace walls was achieved by the new device. The license was granted (1921).

4. *Aluminum Alloys.* It was held that petitioner's alloy was somewhat superior to that subject of the prior patent which was infringed by the use of the subsequently proposed composition. In view of the struggle for existence the industry concerned had to go through at that time, the compulsory license was granted (1921).

5. *Lid Catch for the Buckets of Blast Furnace Bucket Hoists.* Only one of the suggested modifications of the previously patented apparatus proved to be a considerable improvement and even this one appeared to be useful only under very special and rarely occurring conditions. It was held that, therefore, the public was not critically interested in the grant of a compulsory license and the application dismissed (1921).

6. *Ductile Tungsten Filament.* The defendant, an American firm, was owner of the pioneer patent for the ductilization of tungsten wire by cold-hammering. Some German companies, one of which had obtained a patent for the substitution of cold-rolling for cold-hammering in the service of the said method, made applications for compulsory licenses for the cause that the modified process was within the scope of a generic claim of defendant's patent. The grant of the licenses was denied because there was no positive improvement on the original invention established by evidence, and the interest of the public consequently not held to be involved decisively (1924). Incidentally, it may be noted that the American patentee had given license to a German company which on her part had granted several licenses under the patent to other firms.

7. *Alternating current rectifier.* The vacuum bulb of the patented mercury arc rectifier by Cooper Hewitt was made of glass. The petitioner suggested to build it from metal with the view of rendering the rectifier usable for higher current intensities, and had obtained a patent for some embodiments of that conception. The Reichspatentamt dismissed petitioner's claim for the reason that the Cooper Hewitt patent was for a pioneer invention while petitioner's diversification had only little progressional significance. The Reichsgericht, on the other hand, granted the license, attaching weight to the fact that the later inventor took a different course which the original inventor was not disposed to choose; in other words, created much more than a trivial modification of the original invention.

The quoted decisions may suffice to illustrate by example that the German compulsory licensing clause clearly describes the state of facts to be established, leaving not more to the discretion of the court in judging upon the facts than every legal definition inevitably does.

The above cases are quoted from the Code annotated by Edward Pietzcker, retired Justice of the Supreme Court of Germany, published in 1929. On page 400, Pietzcker emphasizes that no exception was to be taken against the language of the provision in the Act of 1911, *and that the number of applications for compulsory licenses was steadily increasing.*

From the preceding statements, it follows as a matter of course that the state of facts of the "dependent" inventions as defined in paragraphs 1 and 2 of Section 21 of the Austrian patent law falls within the scope of the general rule of the German law that uses the "public interest" as the sole determinant, and that consequently the said cases need not be specifically considered in the compulsory licensing provision of the law.

Non-patentable Inventions

In confronting the compulsory licensing clause of the German law with the legal situation in the United States, it must be borne in mind that by the German law, food substances and condiments, medicines and substances obtained in a chemical way are generally excluded from patent protection, and only process claims are permitted which cover a distinct method of manufacturing substances of those kinds. Nevertheless, in Germany also the need for a compulsory licensing system was urgently felt. First of all it occurs also with process patents that the absolute right of the patentee must yield to the necessities of the public. Furthermore, the need for a compulsory license in the public interest may not only arise with some specific kinds of inventions but as a general desideratum.

Exceptions similar to those made in the German law are provided in

numerous countries such as in Austria, Czechoslovakia, Yugoslavia, Hungary, Poland, Portugal, Finland, Norway, New Zealand and Russia. Other patent laws exclude only medicines or chemical substances, or substances obtained in a chemical way and intended for use as foods and medicines (Great Britain, Canada), or medicines and foods and methods of producing foods (Denmark), or medicines and foods save special methods of preparing them.

It would appear as if the protection by patent of chemical substances as such rather impairs the national welfare than promotes it. Permitting new substances obtained in a chemical way to be monopolized by a patentee, no difference how the substance may be prepared; is by far likelier to dampen inventive activity than to arouse it, for in these circumstances every improvement of the original manufacturing method falls with necessity into the sphere of control of the owner of the product patent. The fact that the development of the dye industry in France remained so very far behind the evolution of that branch of art in Germany was generally attributed to the condition that the French patent law grants protection to the dye itself.

Thus, it is not my intention to argue for retaining within the scope of patent protection the substances exempted by the German law. On the contrary, the barring of chemical substances in particular from being patented as products, appears to be a desirable change in the United States patent laws. What I am actually intending to emphasize here is that, however one may wish to proceed in the matter of those exceptions, the patent law reform should give priority to the compulsory licensing legislation.

Practical Use of Compulsory Licensing

Those opposing the incorporation of a compulsory licensing system into the patent laws of this country emphatically refer to the infrequency with which compulsory licensing provisions are invoked in foreign countries where they are available, particularly in Great Britain and Canada. The logical consequence of the conclusion that the rare use that is being made of special forms of compulsory licensing systems in other countries would prove that no compulsory system whatever was necessary to the United States, is evidently most questionable. But this interference, wrong as it is in general, goes especially astray with regard to the German legislation: for quite at variance with statements made in hearings before the Committees of Congress, the compulsory licensing systems of Germany on the one hand, and of Great Britain and Canada on the other, are substantially different.

It is perfectly correct, also with reference to Germany, that most

existing compulsory licensing systems universally presuppose that someone who has improved a patented invention is not entitled to get a compulsory license from the owner of the basic patent just for that reason alone. Yet the assertion made in connection therewith as if it were a statutory condition in all these systems that the owner of the basic patent has abused his monopoly corresponds with the British and Canadian laws in their present form, but is definitely wrong relative to the German law. The only condition imposed by statute in the German Act of 1911 is that, in addition to the private motives of the party applying for a compulsory license, there are reasons based upon public policy that call for allowing the petition to pass.

The British System Compared with the German

In subsection 2, paragraphs (a) to (f), Section 27 of the British Act of 1919, as amended by the Acts of 1928 and 1932, define the circumstances in which a patentee is to be considered as having abused his monopoly rights. Paragraphs (a) and (b) are concerned with the abuse by inactivity, paragraph (c) with the abuse by not satisfying the domestic demand, paragraph (d) with the abuse by the refusal to grant licenses; paragraphs (e) and (f) deal with offenses which fall under the anti-trust legislation of this country and have, therefore, no application to the matters that concern us here. For these six classes of offenses there are three remedies given: The comptroller (whose official position corresponds to that of the Commissioner of Patents) may order the patent to be indorsed with the words "Licenses of Right," which means that any person is then entitled as of right to a license under the patent, or he may order the grant to the applicant of a license—which may be an exclusive license under certain circumstances—or he may even order the patent to be revoked.

There are consequently in the United Kingdom penalties provided for the six classes of abuses defined which go far beyond compulsory licensing, the only remedy offered by the German Act of 1911 in case of necessity if the patentee legitimately refuses to grant a license to an applicant. Yet, on the other hand, the German provision much excels the British system by its range of application and practicability, the point being in Germany whether the patentee, in refusing the grant of a license, damages the public interest, and whether or not this is his fault. Thus, the only question to be investigated is whether in the absence of a voluntary agreement the public interest demands that exceptional measures be adopted, authorizing the petitioner to apply the patented invention on a royalty basis. This question is easily and safely answered, and the adoption of this solitary criterion definitely eliminates the

danger that the compulsory licensing system could be misused for gratifying selfish ambitions and particularly for hurting the smaller man.

In conformity with the different trends of the provisions under discussion, the determinator "in the public interest" that governs the German provision, is only mentioned as an accessory or altogether omitted among the facts to be established according to Section 27 of the British laws. In paragraphs (a) and (b) of subsection 2 the said condition is missing, in paragraphs (c) and (d) mixed up with the prevention of abuse of monopoly rights, and in paragraph (d), moreover, coupled as a secondary condition with the prerequisite that the domestic trade or industry as a whole, or applicant's existing trade or industry, or the establishment of a new trade or industry is prejudiced by the denial of the license; and, what is still more inexpedient, the general condition is introduced by a proviso to the whole subsection 2, that for the purpose of determining whether there has been any abuse of the monopoly rights under a patent, it shall be taken that patents for new inventions are granted not only to encourage invention, but to secure that new inventions shall so far as possible be worked on a commercial scale in the United Kingdom without undue delay.

All things considered, it appears not doubtful that paragraph (d) of subsection 2 of Section 27 of the British Act, though defining a compulsory licensing system, does not define the essence of the compulsory licensing clause of the German Act now in force. Based on this provision, the rule has been established by a British decision that the working of a new invention may, in some cases, constitute the establishment of a new trade or industry, *even though* it depends upon the working of existing inventions. This kind of reasoning sheds a bright side-light on the incisive differences between the compulsory licensing clauses under comparison.

Apart from all other considerations, it is obvious that at all events the circumstantial provisions of Section 27 complicate the legal procedure. And it may further aggravate the procedure that the British law leaves it to the opinion of the comptroller to refer the case to an arbitrator.

To sum up, the infrequency with which the compulsory licensing provisions are invoked in Great Britain is in first instance due to the extremely complicated and expensive proceeding. Furthermore, the British provisions, in spite of their prolixity, do not help in situations urgently calling for redress which are within the reach of the German legal definition.

It follows that the small number of applications for a compulsory

license in Great Britain is of no consequence whatever with regard to the desirability of incorporating some system of compulsory licensing in the public interest into the United States patent laws.

Canadian Experience

Quite the same applies to Canada, since the Canadian sections relating to abuse of monopoly as amended in 1935 substantially follow the British Acts of 1919, 1928 and 1932. The cases of abuse as set out in Section 65 of the Canadian laws in their present form agree in every detail with paragraphs (a) to (d) of Section 27 of the British law.

On one occasion it has been advanced as an argument against the adoption of some compulsory licensing legislation in this country, that in the eleven-year period from 1925 to 1936 only nine applications for a compulsory license were decided upon in Canada. Regarding this argument, it is to be noted that up to 1935, in the first ten years of the eleven-year period concerned, there was in force in Canada the Patent Act of 1923, under the provisions of which a compulsory license was to be granted if the patentee failed to satisfy the reasonable requirements of the public by adequately manufacturing the article or carrying out the process in Canada. In addition to that license on the ground of non-working, the Commissioner was only entitled to grant a compulsory license in case the invention subject of the patent sued on was intended for, or capable of, being used for the preparation of food or medicine.

No word need be wasted about the fact that it does not serve the purpose of elucidating the matter to present the infrequent use of those extremely restricted forms of obsolete Canadian compulsory licensing legislation, in opposition to the introduction of every legislation of that kind into the patent laws of the United States.

Arguments Pro and Con

Compulsory licensing in the public interest is the only legal way inoffensively to keep under control the reward of temporary freedom from competition granted to owners of patents, since it is the ultimate design of this privilege to promote the common good, and the said restricted form of compulsory licensing legislation exclusively serves the very same purpose. It is true that it would seriously vitiate the effectiveness of the patent system in the development of industry, though not "reduce patent protection to naught" as it is sometimes argued, if anyone could obtain a compulsory license to use a patented invention in return for an adequate compensation. Yet this is altogether false with regard to making a patented invention available for use to qualified applicants in case public interests demand such exceptional licensing. There is, consequently, no need to wait until a classification of patents

into major and minor groups has been established in order to permit compulsory licensing only with respect to minor (or improvement) inventions. Such kind of classification would indeed present a difficult, if not insoluble, problem; and above all it is obvious from what has been set forth above that the result obtainable in this way would be utterly unsatisfactory.

It is an uncontested fact, admitted in the hearings before T.N.E.C by leaders of the biggest industrial research departments, that few inventions causing *fundamental* changes in the development of an art are likely to come from the huge industrial research organizations. Research work that is financed by the profits of large corporations is principally "applied" research that aims at developing and improving the methods and devices in current use, so to speak, as insurance against displacement from a dominant position through developments and perfections originating from outsiders (William D. Coolidge, Director of Research Laboratory, General Electric Co.). Inventions that really mark big changes in the art usually come from independent inventors. It may, of course, be quite natural that research organizations, the existence of which is rooted, after all, in the profit motive, are conservative, if not averse to starting radically novel ideas.

In an essay on the "Deficiencies of American Patent Law," Alfred E. Kahn raises the questions: "If, then, we must depend on 'outsiders' for the revolutionary inventions, do they . . . receive adequate support and protection?" and "Is it safe to leave to businessmen the power to reject or accept radical technical innovations with no outside pressure to force them to give the projects serious consideration?"[1] As far as the outsiders are concerned, Kahn contents himself with stating that it may well be argued that independent inventions will be forthcoming in any case because of the inventor's love of his work and the prospect of fame, fortune, or a position of authority in the growing industrial research laboratories. Although this argument is sound by itself, there is no reason to let the matter rest there instead of making an active effort to strengthen the position of the independent inventor. Then, proper compulsory licensing legislation appears to be the suitable remedy: one of the principal objectives of such legislation is to adapt the patent system as exactly as possible to the purpose of protecting inventors who essentially contributed to the progress of an art against oppression by the owners of prior patents, in case the personal benefits of the latter are in discord with the general welfare. If compulsory licenses once had become available, it would no longer be in the power of a group in control of a particular field either to compel an important improvement

[1] *American Economic Review*, Vol. XXX, No. 3 (Sept., 1940), p. 490.

patent to lie dormant for the whole lifetime of one or more prior patents, or to force the subsequent inventor to surrender his invention "at small cost" to the group, and enable it "then to thus increase its control and continue its monopoly" (Dr. Vannevar Bush, President, Carnegie Institution of Washington). Concurrently, compulsory licensing in the public interest will in general produce the "outside pressure" required for directing patent practices into channels of especial social importance.

Last, but not least, compulsory licensing in the public interest will also function in the proper sphere of patent legislation an as antidote to abuses of monopoly rights by patent consolidation through pooling and cross-licensing of patents.

II. *Patent Pooling and Cross-Licensing*

There are different types of patent pools, which term denotes the gathering together of diversely held patents under a system of common ownership or, more usually, of cross-licensing agreements. The accord may select few or only the dominant firms of an industry, or may include all the firms in the industry. All patents the members owned at the time the pool was formed, as well as all patents to be acquired in the future during the term of the agreement, may be placed in the pool, or the new patents excluded from the agreement, or even patents of unusual importance altogether excepted. As a rule the members are licensing one another without compensation.

The knowledge has prevailed that an aggregation of such kind of diversely held patents under a single control turns out to the advantage not only of the parties belonging to the pool, first of all by reduction or elimination of patent litigation, but also promotes the general benefit by both the mediate and the direct accomplishments of such patent structures. It is plain that people who have accumulated an immense number of patents in a given field would ruin themselves financially if they started suing one another, and that such wasteful fighting would not work for the public interest, either. And it is equally clear that no individual company would be able to expend by itself the tremendous sums now devoted to the experimental team work done in corporate research laboratories, work which intensively facilitates and stimulates inventive activities—the basic purpose of the patent system—and, moreover, removes obstacles to prompt industrial exploitation of inventions and prevents unproductive duplication. Through centralization of research work done by people skilled in different arts and coöperating under control, it happens that one man working in a field seemingly very remote from the field of action of another fellow, makes an important contribution to the work of the other (Dr. William D. Coolidge, General Electric Co.). Finally, the free exchange of ideas and information

between rival laboratories is a tremendous accelerator of new development.

Were it possible, without granting inventors an exclusive privilege for seventeen years, to provide them with an efficient stimulus to develop inventions and to disclose their new ideas promptly to society, for instance through giving them rewards by the state, the useful effects would considerably surpass those of the patent system. However, the English philosopher John Stuart Mill, in discussing this possibility nearly one hundred years ago, came to reject it especially because of the difficulty of fairly rewarding the inventor in this way according to the utility of his invention. There seems nowadays a still more serious obstacle in that speculative capital would not back new inventions without the patent protection. And, above all, the right of exclusive exploitation is by far the most desirable reward for inventors from the viewpoint of public policy because of forcing industry to carry on research work tirelessly as a defensive measure against becoming outflanked by competitors.

Consequently, there is nothing to replace the patent system with equal, let alone with better, results. And pooling together with cross-licensing eliminates inherent drawbacks of the patent system, without abandoning its essential advantages, thus serving its major purposes in a higher degree—in the first place for its membership, of course. Under this limitation, one may be disposed to consent to Alfred E. Kahn's opinion that in effecting technological advance under modern conditions the pool is a distinct improvement over the patent system as originally contemplated.[2]

Yet, it is unavoidable, on the other hand, that the huge patent consolidation arising from pooling and cross-licensing occasionally serves as a cloak for bad patent practices:

Closed Pools

He who devised a new invention is of course a competent specialist to develop improvements thereon, and if those improvements happen to be material, they will naturally give rise to an extension of the monopoly. This is a necessary consequence of the patent system that is to be accepted. However, there is no denying that the patent pooling and cross-licensing agreements gravitate towards strengthening and expanding the monopoly beyond the right of control legitimately incident in the patent system. Especially the patent structures of big industries that comprehend thousands of patents, as a just result of collective and coöperative industrial research work, it is true, but to some

[2] *American Economic Review*, Vol. XXX, No. 3, p. 491.

extent also through the inherent facility of absorbing improvements coming from outsiders, give as it were a perpetual monopoly in an advancing art. There are indeed pools which make laudable exceptions, but, as a rule, a group which holds the patent control on a particular field will feel tempted to use its might for the purpose of permanently shutting out competitors from the given field. "Why allow another fellow to get in? We would do everything we could to keep him out from getting in with all the patents we had, and my guess is the other fellows would act about the same way with their patents" (Clarence C. Carlton, Vice President, Motor Wheel Corporation, Lansing, Mich.). Such a kind of domination having its origin from a *forced* growth of the monopoly certainly discourages invention and retards technological progress, and hence defeats the ultimate purposes of the patent system.

Those noxious consequences of patent pooling and cross-licensing have been discussed at great length but nothing has been done for meeting them through legislative action in the proper field of the patent laws, because no way has been found to check abuses without weakening the impetus of the pool systems to technological progress. Kahn proposes the question: Can this new system be so regulated as to retain benefits and avoid evils?—but he offers no positive solution, either.

Remedies

It has been admitted by highly qualified advocates of patent pooling and cross-licensing agreements, such as Dr. Vannevar Bush, that a closed pool is undesirable which has no provision whatever for the entrance into it of a newcomer who brings with him an addition to the situation, however valuable it may be. This disclosure leads straight to the conclusion that legislation could help minimize the bad effects of patent pools by making "open" pools mandatory and regulating the principal conditions of the admission of newcomers. The title to being admitted into a patent pool formed on its founders' own initiative, could, for instance, be given by law to outsiders on condition of their bringing in a basically original invention or a substantial improvement, bearing on the object of the pool. Jurisdiction with reference to the claim itself and the specific provisos may be given to the Commissioner of Patents, who would have to hear and determine the cause at the request of the applicant in case the pool refuses to admit him or the parties concerned cannot settle the condition by mutual consent.

A further legal remedy against the danger that patent pools produce effects that are contrary to the fundamentals of the patent system, could be found in making it obligatory that the exchange of licenses take place upon payment of adequate compensations, and that a specified minimum rate of the royalties go to the inventor. The authority to

settle the controversy—in case the parties do not come to terms—may equally be given to the Commissioner of Patents, whose decision may be subject to an appeal to the Court, in either case.

It is evident that in order to make every progress available to all members of the pool, it ought to be made statutory that the open pools comprehend not only the existing patents of the members without any exception, but also all the patents the members may take out after the time the pool was formed.

Robert E. Wilson, enthusiastically pleading for patent pools in his address delivered in 1943 upon receiving the Perkin Medal, raised the question as to why free cross-licensing agreements covering entire industries would not be still better than the existing cross-licensing arrangements between individual companies which are actively engaged in research.[3] Wilson's answer is in the negative. The main difficulty, he argues, is that such arrangements would run up against human nature. When some individuals or companies realize that their competitors will have the same rights they have to anything new which they may develop, they frequently decide to leave most of the expense of research and development to the other fellow and hope for a free ride for themselves. Other companies which, as a matter of principle, continue their research, sooner or later become irritated when the fruits of their research are appropriated by others who have contributed nothing. Yet, Wilson proceeds in admitting that where, as in the petroleum industry, each new important field of development generally becomes the basis for one or more cross-licensing arrangement with different participants depending upon who has pioneered in the field, which arrangements are open to newcomers "who can contribute substantial patent assets," it is an altogether healthy thing. Consequently, through the compulsory provision that reasonable royalties ought to be charged between the members or units of such open pools, Wilson's only misgivings against rendering pools accessible to qualified newcomers would be done away with. In addition to an impetuous augmentation of personal reputation of an inventor who made a useful contribution to the progress of the entire industry or to the part thereof joined in interest, but not screened from competitors by the pool, the economic reward would grow in proportion as members of the pool take share in a given invention, and thus the maximum service in stimulating inventive activity be provided.

The establishment of such open, though not industry-wide, pools would result in a peaceful coöperation to a vigorous development of the given art without a weakening of competition. *There is, in fact, no intrinsic reason why competitors should not unite their efforts to derive mutual*

[3] Otto R. Barnett, *Patent Property and the Anti-Monopoly Laws* (Indianapolis, 1943), p. 546.

advantage and to obtain maximum utilization of the resources of the nation, instead of working against one another. From the viewpoint of public policy, this appears to be the most desirable state, provided only that a just solution of the technicalities of admission of newcomers and of the compensation in general be sought for and found. This is indeed a delicate problem, but when once good disposition to such action had been arrived at, this question could certainly be settled satisfactorily.

Although open patent pools have voluntarily been put into effect in important industries with wholesome results, such kind of regulation will be long in appearing as a coercive measure because of going to the roots of the patent system. Up to that time, the institution of compulsory licensing in the public interest, a legal remedy well established in the patent systems of industrially important countries, would prove to be helpful also against ill usage of patent pooling and cross-licensing, through its operation as well as through its mere existence.

THE PROBLEM OF BANK-HELD GOVERNMENT DEBT

By HOBART C. CARR*

A consequence of the methods used in financing the war has been the acquisition of a tremendous amount of government securities by the banking system of the country. A matter of grave concern at the time, the banks' holdings are now in the forefront of the discussion about combating inflationary tendencies. Out of several plans dealing with government security portfolios of the commercial banks, that of Professor Leland has been singled out for attention here,[1] but since his suggestions are similar to some of the others the analysis has a wider application.[2]

1. *The Consequences of Large Bank Holdings of Government Securities*

Professor Leland's main argument rests upon the contention that the independence of bank action resulting from large bank holdings of government securities weakens the effectiveness of measures for controlling inflation and arresting the development of deflation. Whenever they want to expand loans, banks have only to sell government securities or to allow some of their holdings to run off; to increase excess reserves in critical times, they need only to follow a similar course. To the Treasury such independence is dangerous because of the size of the floating part of the debt and because of the prospective continuation of deficit financing in view of the "aftermath" of war and the possibility of depressions in the future. The debt already in the hands of the banks is costly to the Treasury—the average coupon of bank-held marketable securities in December, 1945, was about 1.68 per cent—and any measures designed to lessen this cost by increasing the floating portion of the debt would add to the danger by an increase in the banks' independence.

2. *Solutions Offered by Professor Leland*

Two alternatives are offered to meet the situation and, perhaps incidentally, to relate the cost of credit creation by the government more

* The author is associated with the Domestic Research Division of the Federal Reserve Bank of New York. The opinions he expresses are entirely personal.

[1] Simeon E. Leland, "The Government, the Banks and the National Debt," *Commercial and Financial Chronicle*, January 17, 1946, pp. 242, 281–84.

[2] Roland I. Robinson, "Monetary Aspects of Public Debt Policy," *Postwar Economic Studies*, No. 3 (Washington, Board of Govs. of the Fed. Reserve System, 1946). Lawrence H. Seltzer, "A Uniform Treasury Certificate as Bank Reserve," *Commercial and Financial Chronicle*, February 28, 1946, pp. 1087, 1116–17. Melvin G. de Chazeau and others, *Jobs and Markets* (New York, McGraw-Hill, 1946), pp. 63–65.

closely to the cost of banking services. In brief, the first plan involves the exchange of the banks' present holdings for a special nonmarketable security to be required as reserve against either the volume of deposits or their increase during some given period.[3] In the event of a decline in deposits, the special security would be redeemable and discountable at the Reserve Banks at rates to be set at the Reserve Banks' discretion. The interest paid would be low but might be varied according to conditions which, at times, might make it desirable for the banks to hold more than the minimum reserve. These securities would be redeemable at the pleasure of the government and have no definite maturity date.

The ability to discount the securities would permit individual banks to obtain reserves when necessary but the over-all volume of credit, it is claimed, would be governed by the reserve requirements. The special reserve requirements would be fixed in a way that would preserve some flexibility in the banks' portfolios through retaining part of their ordinary Treasury securities. Enough of the special securities would be required, however, to deprive the banks of their dominating influence on the government security price structure.

The second plan advanced by Professor Leland is a somewhat more sophisticated version of the Patman bill.[4] Under this alternative the Treasury would be given the power to borrow directly from the Reserve Banks all funds needed to finance the government. The Treasury could then borrow enough to pay off its obligations to commercial banks. To offset the expansion of Federal Reserve credit, the Reserve Banks would be empowered to establish reserve requirements for nonmembers and to raise requirements for all banks to the necessary level. Interest would be paid on these reserve balances. Both the requirements and interest rate would be left to the discretion of the Reserve System but Treasury approval would be necessary. The interest paid to the Reserve Banks on the Treasury's direct borrowings would be related to the expenses incident to this plan; a recapture provision in the form of a franchise tax on the Reserve Bank earnings could be enacted to drain off any earnings resulting from too liberal a rate.

3. *Initial Steps Required by the Alternative Proposals*

Both plans presuppose that government security reserve requirements

[3] This suggestion is similar to several others including one made by Lawrence H. Seltzer in the *Journal of the American Statistical Association*, March 1940, pp. 24–36.

[4] H.R. 90, 79th Cong., 1st sess. Professor Leland recognizes more clearly than Representative Patman that the scope of the plan would have to be extended beyond merely providing the Treasury with the power (and the funds) to redeem the banks' securities. In the Patman bill, for example, no mention is made of the need to control the tendency toward an expansion of bank excess reserves generated by the increase in Federal Reserve Credit.

apply to all commercial banks; otherwise, in all probability, the ends desired could not be achieved. Professor Leland suggests that banks collaborate with the government in working out a solution. These plans, however, offer no clear-cut advantages which would lead all banks to comply of their own free will with the provisions. It is doubtful that the banks would underwrite any such proposal when the requirements to be imposed are undetermined and to be variable at the discretion of the Reserve Banks and when no specific rates either on the special securities or the reserve balances have been suggested. If the requirements and rates were written into the legislation some of the claimed advantages would disappear because of the limitation on the discretionary power of the Reserve Banks. And even if that price were paid to obtain agreement on adoption among a large number of banks, the legislation would have to be forced on some. To accomplish enforced compliance, however, Congressional enactment might or might not be sufficient. Most assuredly any such measure would be challenged in the courts on the question of state's rights.

In order to achieve conversion of the banks' present holdings of marketable securities into another, more restricted type of asset, Professor Leland's first proposal is far superior. Under this plan the banks would be compelled immediately to exchange their holdings of ordinary government securities for the special securities and little or no Reserve Bank action would be necessary assuming that each bank would have a sufficient amount of ordinary government securities to meet the new requirements. Some banks, however, might not have the requisite amounts and would have to buy the new "reserve securities" by liquidating other assets, *e.g.*, loans or other securities or perhaps (excess) reserves. Just how serious the problem might be if the requirements against deposits were the same for all classes of banks is illustrated in the following table even though it covers only insured nonmember banks. (The ratios used are those suggested by Professor Seltzer, 65 per cent of demand and 50 per cent of time deposits.[5]) Up-to-date figures might show a somewhat improved situation in the event that government security holdings of the banks in the critical classes grew faster than deposits since June, 1945.

Professor Seltzer, recognizing that flat percentages might have the results depicted in the table—namely, that whole classes of banks would be deficient in their security holdings—suggests that requirements could be varied among the banks. Action could be taken to eliminate deficiency classes of banks by making deposit size the basis of any

[5] Laurence H. Seltzer "A Uniform Treasury Certificate as Bank Reserve," *Commercial and Financial Chronicle*, February 28, 1946, pp. 1087, 1116–17.

differentiation[6] but there would probably still be individual banks whose holdings were insufficient. A further troublesome feature: banks with a large proportion of time deposits might still be hard pressed to find income to meet their expenses and might be compelled to reduce substantially or eliminate entirely payment of interest on time deposits. To take care of this situation the plan might be modified by dropping any consideration of a special requirement against time deposits or, if that proves not to be feasible, by allowing a higher rate on the required special securities against such deposits.

COMPARISON OF SPECIAL SECURITY REQUIREMENTS[a] AND GOVERNMENT SECURITY HOLDINGS OF NONMEMBER INSURED BANKS BY DEPOSIT SIZE, JUNE 1945

(In millions of dollars)

Deposit size in dollars	Special security requirements[a]	Holdings of U. S. government securities—direct and guaranteed	Excess of government securities over requirements	Number of banks
250,000 or less	12	8	− 4	101
250,000– 500,000	183	136	− 47	749
500,000– 1,000,000	777	668	−109	1,719
1,000,000– 2,000,000	1,682	1,511	−171	1,929
2,000,000– 5,000,000	2,428	2,295	−133	1,340
5,000,000–10,000,000	1,626	1,646	20	414
10,000,000–25,000,000	1,146	1,193	47	133
25,000,000–50,000,000	599	648	49	29
More than 50,000,000	964	1,052	88	19

[a] Based on 65 per cent of demand and 50 per cent of time deposits, excepting interbank deposits.

The terms of the exchange would also present difficulties. If a par for par exchange were offered, the banks would have to write off whatever premiums they carried on their holdings of ordinary government securities. In June, 1945, the amount of these premiums approached 800 million dollars for all commercial banks; for individual banks the write-off might be serious, involving capital impairment. If a book value exchange were resorted to, the debt would be increased and some banks would be given substantial profits.

The Patman-type proposal is less clean cut. Presumably the Treasury would have to wait until each security matured before liquidating the banks' holdings; at least nothing is stated that would lead to a different conclusion. Presumably also the banks' holdings of ordinary govern-

[6] Lowering the requirement against demand deposits by steps of 5 percentage points starting with the class of banks with 2 to 5 million dollars (so that the smallest class of banks have a requirement ratio of 40 per cent) would virtually eliminate all deficiency classes.

ment securities would be frozen as of some given date (although nothing is said about such action); otherwise, the motive for the banks to reach out for longer term securities would be almost overwhelming. Even if such a freeze were provided for, it seems unlikely that banks would hold each security to maturity although much would depend on the rate of interest paid on the new reserve balances. In any event, the process of depriving the banks of most of their holdings of marketable securities would be long and complicated and the Treasury would probably realize savings in interest only slowly.

This plan would lead to other difficulties when reserve requirements were raised as securities were redeemed, difficulties which would stem from the differences in the distribution of deposits in banks and of government securities. Some banks would have ample funds from the redemption of securities to meet the increased requirements; others would need additional reserves. To balance their increased requirements the latter class of banks would, in effect, be forced to sell securities to the former. Such a movement of securities, however, would not be without its compensating features. In the early years of the plan, banks losing securities (and gaining reserves) most rapidly would be those which had invested their funds more largely in short terms; the banks needing reserves would be those which had taken a longer position. Since the interest paid on reserve balances would probably be low, banks with the shortest maturities would face an early drop in income. The market sale of securities by the reserve-deficient banks would tend to even out this discrepancy in earnings.

Still another, but relatively minor, problem would have to be faced if the second proposal were adopted. Each time the Treasury redeemed bank-held issues and created new reserve balances with the Reserve Banks the reserve ratio of the Reserve Banks would decline. The volume of the banks' holdings is so great that reserve requirements of the Reserve Banks would have to be lowered, perhaps even abolished, unless a return flow of currency or inflow of gold of sizeable dimensions occurred in the meantime.

4. *The Two Plans in Operation*

After the process of exchange or liquidation had been completed each plan would have to meet the requirements of the economy. The widespread shifts in the geographical and personal distribution of ownership of funds in accomplishing the nation's business and the rise and fall of the pool of deposit money involve significant transfers among bank assets and liabilities under the present system; the rôle of any modification of that system should be that of facilitating the functioning of the economy or at least not to stand in the way.

The first plan with its special security requirements would satisfactorily meet the problem of dealing with deposit shifts. Under this plan a bank losing deposits to another could arrange for shifting the special securities to it, provided the destination of the funds were known. Otherwise, the Treasury would act as an intermediary. The bank losing deposits would find after it had provided for the loss of reserves—perhaps by discounting—that it had redundant special securities; the bank getting deposits as well as the reserves would need additional special securities which would be supplied by the Treasury which would have come into possession of the certificates through redemptions by the bank losing deposits.

In case a general expansion or contraction of deposits took place, operation of the first proposal would lead to complications compared with the present system. Under this scheme a bank gaining deposits not transferred from another institution (arising, say, from a return of currency from circulation) so that both reserves and deposits were enlarged would need to trade some part of the reserves gained for the required amount of special securities. Another part of the funds acquired would be frozen to meet the ordinary reserve reqirements, thus leaving only a small fraction of newly gained reserves as a basis of further credit expansion. This would be true only *if* the Treasury did not spend the proceeds it had received from the sale of special securities; otherwise, another secondary deposit expansion would occur. What the Treasury would do with the receipts would depend on the stage of the business cycle in which the original gain of reserves occurred. Presumably if business conditions were close to a cyclical peak the Treasury would have a balanced budget and would, therefore, retire the ordinary debt; if depression were threatening or developing, the budget would probably be unbalanced and the funds would be used for ordinary purposes. *Any* use would result in successive increases in deposits and special securities, a complication that none of the authors of this and similar proposals seems to have taken sufficiently into account.

An expansion of deposits without a gain of reserves would be even more complex because of the involvement of Federal Reserve credit. Suppose that in the original instance an expansion of deposits took place by way of a loan, the banks expecting to obtain Federal Reserve credit to make up for their increased requirements: the first proposal would call for Federal Reserve credit to buy the special certificates and to meet the rise in the usual required reserves. Part of the funds arising from increased Federal Reserve credit would go to the Treasury in payment of special securities; the Treasury then would have to decide how to spend the proceeds, the effect of which would be to give rise to further credit expansion.

Contraction of deposits under Professor Leland's first plan would also precipitate a relatively involved chain of repercussions. A shift of deposits into currency would deprive the banks of reserves, a circumstance which under the first plan would be met only in part by the lowering of the ordinary required reserves. In the last analysis all the other funds would have to be obtained by expanded Federal Reserve credit, even those which the banks would initially receive from the Treasury from cashing their special securities. The redemption of these securities would impose a drain on Treasury funds which would necessitate additional financing, perhaps by withdrawals from War Loan deposit accounts, perhaps by sale of other securities. In either case the banks would need to pay reserve funds into the Treasury, thereby giving rise to a need for Federal Reserve credit.

A more likely cause of contraction of deposits during a deflationary period, however, would be a reduction in bank loans. Under the first plan this would be accompanied by a fall in the banks' reserve requirements (both special and ordinary). Unless the banks were induced or permitted to hold special securities in excess of their requirements the Treasury would have to raise the funds to redeem them presumably through sale of other securities to the banks. If it were desirable on balance to move securities into the banks, even more would have to be sold.

The genesis of many of the technical problems involved in the first plan advanced by Professor Leland lies in its special Treasury security requirement and the resulting flows of funds between the banks and the Treasury as deposits shift about, or expand, or contract. His second proposal with its similarity to the Patman bill has no such special security requirement so that its operation is much like the present system. Reserve requirements, it is true, would be very much higher than now but Treasury receipts or expenditures would not be involved in the movements of deposits.

Transfer of deposits—without a change in the total amount—under this plan then would have the same effects as today except that a greater proportion of reserve balances and a lesser proportion of other assets would be involved in a shift of deposits of any given size. Similarly the reserves received by the banks when currency returned from circulation or the gold stock increased would be largely frozen by a rise in their requirements (because of the expansion in deposits); the secondary credit expansion would be limited by the small excess reserves which would remain. Should deposits increase without a gain of reserves—say by way of loan expansion—the banks would have to provide for the resulting great enlargement in their required reserves. In no case—in contrast to the special security proposal—would the Treasury have acquired any spendable funds.

A contraction of deposits and reserves—say, from a growth in currency circulation—under the Patman-type plan would be largely compensated for by the resulting fall in the banks' required reserves. If the banks had no excess reserves to balance the remainder of the loss of reserve funds, additional Federal Reserve credit would be called for but the amount of such credit would be only a small portion of total reduction in reserves and deposits. Should the contraction be confined to deposits, a substantial portion of reserves would be freed as the high requirements against the deposits were relaxed.

5. *The Relation of the Two Plans to Debt Management and Credit Control*

From the standpoint of removing the commercial bank holdings of government securities from the market, the special security plan seems far better than the second; it would lead to more calculable and prompt results with fewer complications in the process. After that initial step has been completed, however, credit control through debt management could be accomplished with greater facility under the second proposal. Under this proposal the Treasury's excess of cash income in times of full or high employment could be used to destroy deposits and reserves as securities held by the Reserve Banks were retired. The money market would be tightened as securities moved to the Reserve Banks, or loans were called, or borrowings from the Federal Reserve Banks were increased so that the banks could replace the reserves lost through the debt redemption processs.

In times of impending or actual deflation, if expansion of deposits were desired, the Treasury could finance its deficit with ease under the the Patman-type plan. Reserves and deposits could be increased simultaneously by spending the proceeds from direct sales of securities to the Reserve Banks. Whether the banks would use the excess reserves thus created to give rise to a secondary deposit expansion would be dependent on many factors, including the rate of interest on the idle reserve balances at the Reserve Banks (which could be manipulated) and rates obtainable from other investments. One of the features of the plan—payment of interest on idle reserve balances—might prove to be a drawback since it might deter the banks' venturesomeness in expanding their loans or investments at such times.

Use of Treasury surpluses to retire Treasury debt in good times would not be as simple under a plan requiring a special security reserve as in a proposal of the Patman type. If ordinary securities were redeemed, most of the deposits received by the Treasury through its excess of income would be returned to the banks (since ordinary debt would be predominantly in the hands of nonbank investors); some of the surplus would have to be retained to retire the special securities which the net decrease in

deposits would call for. To destroy the deposits by redeeming special securities would be possible but, if the full amount of excess income were to be used, the special security requirements would have to be reduced (if the bank had no excess holdings)and, at the same time, ordinary reserve requirements would have to be raised. Debt retirement under this plan in contrast to the Patman-type proposal would not destroy reserves and thus, if ordinary requirements were not increased, the banks would be given excess reserves. This course—lowering special security requirements while raising the ordinary type—might be disturbing because of its apparent internal inconsistency.

In the face of deflationary developments the process of creating deposits by the Treasury could be accomplished by the sale of ordinary securities directly to the banks. Such procedure would have the disadvantage of partially restoring the banks' importance in the market for such securities. Another course which could be followed would be to raise the special security requirements of the banks, an action which would entail the lowering of ordinary required reserves (if the money supply were to be increased). Still another alternative would be to make the rates on special securities so attractive that the banks, if given the opportunity, would invest in them above their minimum requirements. Possibly a different kind of special security could be issued for that specific purpose.

Considered in the light of debt management, both the special security plan and the Patman-type proposal have a common shortcoming; neither of them makes any attempt in the face of inflationary forces to move government securities into the hands of nonbank investors. They might, however, provide the means for persuading the Treasury that, in view of the interest savings realized, it could afford to offer long-term, high coupon bonds to nonbank investors and use the proceeds to retire debt held by commercial banks or the Federal Reserve Banks as the case might be. Whether such an alternative, even if accompanied by higher rates on government securities generally, would stop nonbank holders as a group from monetizing a portion of the debt is dubious, but it would at least facilitate the purchase of a part of the debt by some of them and thus deter them from adding to that part of the money supply—namely, the active part—which would be bidding for relatively short supplies of goods.

Whether or not either plan would reduce bank earnings and the Treasury's interest cost depends in the main on two factors; the rates which were established on the special securities or reserve balances and the effect of such rates on those on other types of bank earning assets. At the outset it is clear that bank earnings and the interest cost of the Treasury would tend to be decreased. Under present conditions it is in-

conceivable that the rates paid to banks by either plan would not be set at a lower level than the present average coupon of 1.68 per cent. Over a long period, rates might possibly be fixed with a greater weight on credit control possiblilities than on the cost to the Treasury; even so the tendency might be toward reduction of both earnings and interest charges.

Any rate which was lower than those obtainable from other kinds of earning assets would obviously tend to lower the banks' income. Every deposit-creating purchase of an earning asset would involve (if the banks had no excess reserves) the giving up of other earning assets to the Reserve Banks, partly to acquire reserves to meet ordinary requirements and partly to meet special or additional requirements; if the interest paid on special securities or reserves were lower than the rate on the other assets, bank earnings would be reduced. Together, the increases in the two requirements would be a high proportion of the deposit-generating asset and the prospects of lower yields might make the banks overcautious in their lending activities and in this way curb earnings even further. In other words, the initial amount of Federal Reserve credit needed to finance the acquisition of such an asset under both plans would be greater, and might very well deter the individual bank from making a loan. The amount of deposit expansion which would eventually be financed by the initial increase in Federal Reserve credit would differ between the two proposals. Under the special security plan it would cover as much deposit growth as now (assuming ordinary requirements to be unchanged), but only after the Treasury had fully spent the proceeds from the sale of the special securities; under the second proposal the necessary amount of Federal Reserve credit would initially and eventually be much higher per dollar of deposit expansion.

The effect of interest rates on special issues or reserves on other rates is difficult to assess. It may be that all short-term rates would be set at whatever level the special rates were fixed[7] although this appears quite unlikely. It may be that it will prove to be impossible all down the line to insulate rates on government securities from rates on other types of credit. In that case, rises in loan rates might eventually be reflected in rates on government debt, at least on the rates on the ordinary type.

[7] A suggestion of Ralph A. Young of the Board of Governors at the January, 1946, meeting of the American Economic Association.

POST-WAR INFLATION AND FISCAL-MONETARY POLICY IN JAPAN

By KENNETH K. KURIHARA*

Japan's return to a normal economy is a point of great concern not only to the Japanese but also to the Allied Command. General MacArthur and his economic advisers are confronted with the delicate task of remolding the Japanese economy in such a way that the long-range political interests of the Allies are promoted without an undue strain on the economic welfare of the Japanese people. Of all the Allied economic directives thus far issued to the Japanese government, those relating to inflation are by far the most predominant. For post-war inflation is not only threatening the economic security of the Japanese people but is also deterring the Allied effort to expedite democratic processes in that country. For this reason Japan's present economic policy is centered around the problem and methods of reversing the inflationary trend, and the Allied Command is actively supporting such a policy on the part of the Japanese.

Post-war inflation in Japan is a special kind of price instability that can be understood only against the background of war financing and in the context of a military defeat. The concrete techniques, mechanics, and effects of various anti-inflation measures adopted by Japan can best be appraised in a similar setting. The effective control of inflation is the crucial test of any post-war government in Japan as well as a measure of the success of Allied economic guidance. Much has been written on the problem of post-war inflation in Japan, but thus far no systematic analysis has been made of the ways and means of controlling inflation that have been adopted by that country. Therefore, the purpose of the present paper is to show how Japan, under Allied guidance, has tried to overcome the inflationary crisis.

Underlying Inflationary Factors

During the war inflation was kept under control by rigid price control, production control, and other economic controls. But with the end of the war those controls were relaxed or removed only to bring to the surface the cumulative effect of those underlying forces which irrestistibly drove Japan into an inflationary crisis, namely, (1) deficit war financing and (2) general scarcity. The former led to extraordinary

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currency expansion and, hence, the increased money demand, while the latter was intensified by increasing military needs and then greatly circumscribed by a military defeat. These forces were present, in varying degrees, in all warring countries, but in the case of Japan they assumed an extreme form because of the desperate character of its totalitarian war economy. These basic factors formed a background against which inflation developed.

Deficit War Financing

First, it is necessary to indicate the exceptional nature and method of war financing in Japan. According to an official source,[1] borrowing accounted for 80 per cent of the total outlay of ¥222 billions for financing the so-called "Great East Asia War" from December, 1941, to August 1945. Thus, instead of relying increasingly on taxation to finance the war, as other countries did, Japan resorted almost exclusively to borrowing. In other countries borrowing served the double purpose of financing the war and of curbing inflation, but in Japan it only aggravated inflation. For the Japanese method of borrowing was such that more money was injected into the income stream than was taken out of it.[2] Japanese borrowing during the last war was particularly inflationary in effect because (1) the Diet never placed any restriction on the amount of government bond issue and (2) virtually all of each bond issue was absorbed by the Bank of Japan and other banks, not by the general public.

Between 1941 and 1945 war bonds were issued to the amount of ¥120 billions.[3] This laid a basis for post-war monetary expansion. The bond issue progressively mounted even after the August surrender, namely, ¥4 billions in August, ¥5 billions in September, and ¥7 billions in October.[4] At the beginning of the "China Affair" in 1937, Bank of Japan notes in circulation totalled ¥1.8 billions. This figure jumped to ¥5.9 billions at the beginning of the "Great East Asia War." By the end of the war, August 15, 1945, Bank of Japan notes had increased to ¥32 billions.[5] In other words, they expanded at the rate of more than ¥6 billions annually. Owing to the withdrawal of bank deposits, the pay-

[1] A Diet announcement (*Hokubei Shimpo*, New York, Nov. 15, 1945).

[2] Regardless of financial markets, the government issued every month bonds underwritten by the Bank of Japan, which credited the government with its own notes. As the government spent these credits, money flowed into the hands of individuals, who deposited it in their own banks. These banks in turn used the deposits to buy a portion of the bond issue from the Bank of Japan, and corresponding amounts of currency were withdrawn. But a residue of each bond issue remained in the Bank of Japan, and cumulatively larger amounts of currency were left in circulation.

[3] *Sekai Shuho*, Tokyo, Dec. 22, 1945.

[4] *Mainichi*, Osaka, Oct. 22, 1945.

[5] *Hokubei Shimpo*, May 4, 1946.

ment for war goods under contract, and other payments by the government, the Bank of Japan note issue continued to increase after the end of the war, as shown in Table I.

TABLE I—CIRCULATION OF BANK OF JAPAN NOTES, MAY–DEC., 1945[a]
(In millions of yen)

Month	Amount
May	23,207
June	26,181
July	28,456
August	42,300
September	41,426
October	43,128
November	47,096

[a] Finance Ministry estimate (*Nippon Times*, Tokyo, Dec. 4, 1945).

General Scarcity

Monetary expansion, however great, could not have entailed inflation had the supply of peace goods increased *pari passu* with the demand for them toward and soon after the end of the war. To begin with, the war economy had kept the production of civilian goods to an intolerable minimum. To make the matter worse, merchants and farmers hoarded a considerable amount of goods in anticipation of higher prices. New output was coming forth very slowly, partly because of bottlenecks in raw materials and transportation, but largely because more than half of the country's manufacturing facilities had been destroyed by the war.[6] With the end of the war, production control was removed and producers were no longer required to produce and sell at official prices. Restrictions imposed on imports were still another retarding factor. The prospect of paying reparations in goods made many large manufacturers hesitate to reconvert their manufacturing equipment to peace production.

In other countries which faced post-war inflation the supply situation was somewhat improved by the acquisition of capital equipment and raw materials on reparations count as well as by relief shipments from elsewhere. France, China, and Belgium are cases in point. Being a defeated nation, Japan could expect no such net additions to domestic production. Rather, Japan was confronted with the necessity of paying reparations to the Allies in capital equipment and other goods. For instance, on January 21, 1946, the Allied Command seized more than 400 Japanese war plants for eventual use in reparations. This action admittedly prevented a considerable amount of capital goods from being used for peace production. It was because of the inability to improve the

[6] *Mainichi*, Oct. 5, 1945.

supply situation immediately that Japan turned to fiscal and monetary considerations in order to combat the inflationary trend.

The Inflationary Trend

In spite of continued price control and rationing the mounting pressure of extraordinary currency expansion and commodity scarcity inevitably manifested itself in higher general prices and in the higher cost of living in particular. One writer[7] estimated that the general cost of living in Japan was twenty times as high at the end of the war as it was on Pearl Harbor Day. Between the surrender in August, 1945, and May, 1946, the average cost of living rose 850 per cent.[8] Table II shows that general prices increased more than sixteen times during five years of the war.

TABLE II—GENERAL PRICE INDEX, 1941–45[a]

Year	Index
July, 1941	100
July, 1942	190
Dec., 1943	242
Dec., 1944	324
Oct., 1945	1616

[a] Commerce and Industry data for 1941–42; Bank of Japan data for 1943–45.

Even such an increase does not reveal the degree of inequality suffered by the individual recipients of fixed or low incomes. The Bank of Japan survey estimated that between 1943 and 1945 the average black market price increased 34 times.[9] Inasmuch as the consumer had to depend on the black market in addition to rationed goods, such a tremendous increase in black market prices must have affected him more than an increase in general prices would seem to indicate.

According to the Allied report of April 11, 1946, in January, 1946, "take-home" earnings were 300 to 400 per cent over the 1937 level. Practically all the money thrown into the war industries went into the pockets of the people as salaries and wages, the idle money being freely spent for purchasing scarce goods and thus inviting inflation. Wartime savings, which the government had encouraged, and hoarded cash were thrown back into the income stream as the saver and the hoarder sought to convert their cash into goods for fear of rising prices. Thus, during the few months following the August surrender there ensued a mad race between consumer spending and prices.

[7] Miles W. Vaughn, United Press correspondent in Tokyo, *Washington Daily News*, Washington, D.C., Oct. 23, 1945.

[8] *New York Times*, May 26, 1946.

[9] *Yomiuri Hochi*, Tokyo, Nov. 11, 1945.

Anti-Inflation Measures

As the pressure of inflation on the living levels of the people increased, there grew tremendous popular agitation against inflation. All the newly organized political parties proposed, among other things, conflicting anti-inflation measures. Economists recommended, and in some cases even demanded, immediate action to arrest inflation.[10] The various measures proposed by political parties, economists, and the press were predominantly of a fiscal and monetary nature. Most of them seemed to be resigned to accept the view that there was not much hope for increasing production in any immediate future, and therefore emphasized the need for decreasing the money demand. As a result of popular agitation and under Allied pressure, the Japanese government adopted measures calculated to stop inflation eventually, if not immediately. For purposes of analysis the measures taken may be divided into monetary and fiscal. Non-monetary measures will be discussed as a supplement to the monetary measures.

Monetary Measures

On February 16, 1946, the government ordered all banks to limit monthly cash withdrawals from savings accounts to ¥300 per family head plus ¥100 for each dependent. "War sufferers" were allowed to withdraw a family aggregate of ¥5,000 and candidates for the Diet to withdraw up to ¥25,000 per person for campaign funds. The measure provided for an emergency withdrawal of ¥2,000 for a wedding or a funeral. Medical and hospitalization expenses could be withdrawn from bank accounts upon the presentation of evidence. Withdrawals against pay checks were limited to ¥500 per wage earner. Savings accounts beyond these maximums were frozen each month. In general, the government prescribed ¥500 as a maximum for per capita consumer spending per month.

The maximum withdrawal of ¥300 plus ¥100 per dependent proved to be too high to cut down consumer spending drastically. Assuming the average size of Japanese families to be five, every family could withdraw from bank accounts a total of ¥700 to spend every month. Every salaried man or wage earner was expected to live within the limits of the prescribed maximum of ¥500 a month. But it has been found that the average wage earner spends more than that maximum, owing to the high cost of living.[11] The biggest loophole was the fact that business men and farmers were allowed to withdraw unspecified extra cash on "business

[10] *Cf.* Prof. Hyoe Ouchi, Tokyo Imperial University, his radio address of Oct. 17, 1945, "Advise to the Finance Minister"; also Prof. Yasuji Kazahaya, Kyushu Imperial University, "The Basic Nature of Japanese Public Finance and its Democratization," *Sekai Shuho*, Dec. 22, 1945.

[11] *Keizai Shimbun*, Tokyo, April 26, 1946.

count" in addition to the continuous cash income that they were enjoying.

In view of the failure of frozen savings to bring down prices the government revised the above regulations on April 1, 1946. According to the revised regulations, the previous maximum of ¥300 per person has been reduced to ¥100, the family total of ¥5,000 for "war sufferers" has been suspended, and entrepreneurs' bank accounts have been blocked. These changes are a considerable advance over the old regulations, and are likely to decrease effective demand appreciably. The freezing measure may discourage savings and hence increase spending. But such spending resulting from the mere failure to save is greatly circumscribed by the fact that there are not enough things for which to spend. The measure is effectively anti-inflationary as far as the present saver-consumer is concerned, for obviously a maximum cash withdrawal of ¥100 a month does not go very far in terms of prevailing prices.

Total national savings were estimated at ¥170 billions in September, 1945.[12] Although some of these savings were in the form of time deposits, the rest were demand deposits as liquid as cash. Therefore, the government announced at a September 5, 1945, Diet session that it would pay particular attention to the matter of payment of savings and that at least ¥60 billions would have to be saved during the fiscal year 1946 in order to decrease inflationary pressures and to facilitate foreign trade. Whether or not such enormous savings will have the desired effects mentioned depends on how much will materialize in new investment, especially in the production of urgently needed goods and exports. A sound savings policy, therefore, requires that the immediate objective of reducing consumer spending be carefully coördinated with the more fundamental purpose of increasing production. That is to say, during inflation the freezing of savings must not be made to preclude the possibility of new investment. The blocking of entrepreneurs' bank accounts, for instance, is presumably designed to prevent speculation or spending for consumption. But it will unwittingly retard production if entrepreneurs' current earnings are not sufficient for expanding business or starting new enterprises.

Besides freezing savings, the government called in old currencies by issuing the "new yen." The holders of old money above the denomination of ¥10 were required to turn it in between February 25 and March 2, 1946. The government further declared unexchanged old money null and void after the latter date and any private exchange dealings thereafter subject to a fine of ¥10,000 or less or to imprisonment not exceeding 3 years. The exchange was yen for yen, but it blocked amounts above

[12] Finance Ministry estimate, *Hokubei Shimpo*, Nov. 15, 1945.

specified maximums. The public institutions received in new money all that they turned in, but business firms could exchange only such amounts as would be necessary for current business operations. Individuals were allowed to exchange a maximum of ¥100 per person at any one time upon the presentation of a rice ration book.

Before the exchange some ¥60 billions was in circulation, but 10 days after the exchange period the figure went down to ¥15.2 billions.[13] The difference had been largely blocked and partly demonetized or lost. But this drastic decrease in the circulation of money was short-lived, for money was expanding daily at the rate of ¥700 millions around the end of February, 1946.[14] By April 13, 1946 the circulation of money had increased to ¥23.6 billions.[15] However, inasmuch as savings withdrawals are now more rigidly controlled, monetary expansion will doubtless slow down. Since the velocity of money usually increases during inflation, a decrease in the circulation of money may be somewhat counterbalanced. In fact, the common practice of trading on credit was reported to have greatly increased since the "new yen" measure went into effect.[16] Such a tendency will of course increase the velocity of money. Inasmuch as paper money (treasury notes, Bank of Japan notes, and other bank notes) and coins are commonly used for daily transactions in Japan, the new restriction of cash holdings must have had a great restraining influence on consumer spending. Available evidence shows that such was actually the case after the exchange started.[17]

Another monetary anti-inflation measure was taken as a result of the Allied directive of April 8, 1946, ordering the abolition of the "designated bank" system. Early in 1945 the Finance Ministry "designated" a few large banks as exclusive agencies to extend almost unlimited credits to war industries and at the same time it prohibited loans to non-war industries. After the end of the war former war industrialists on the government's approved list could still obtain preferential loans from these banks even if the credits thus obtained eventually went into speculative channels. That is to say, they allegedly used the loans to buy up scarce consumers' goods with a view to selling them later in the black market. Thus, the "designated bank" system presumably contributed to inflation in two ways, namely, (1) in that it made large-scale speculative spending possible and (2) in that it prevented the otherwise possible financing of consumption-goods industries. The abolition of the "designated bank" system, therefore, means that bank credit will henceforth

[13] *New York Times*, April 1, 1946.

[14] *Loc. cit.*

[15] *Hokubei Shimpo*, May 5, 1946.

[16] *Ibid.*, March 23, 1946.

[17] *Loc. cit.*

be made available to consumption goods industries. The measure is expected to speed up general reconversion considerably. Thus, it will influence inflation largely through its influence on production.

There are other favorable developments of a monetary nature. On November 1, 1945, the Bank of Japan revised the standard discount and loan interest rates, and abolished the preferential treatment accorded to the notes of war industries. Under the new ruling, notes of war industries are excluded from the daily interest of 9 *rin* for commercial note discounting.[18] The loan interest rate on the security of debentures relating to Manchoukuo or to war industries notes has been raised from 9.5 *rin* to more than 1 *sen*. The interest rate on the overdraft on current deposits has advanced from 1 *sen* to 1.1 *sen*. In general, the monetary authorities (the Finance Ministry and the Bank of Japan) are presently pursuing a policy of extending liberal credit to producers, especially those of urgently required goods and services.

Fiscal Measures

The government had committed itself to a liability of some ¥56 billions payable to war industries, insurance companies, and individuals, and had paid out ¥6 billions after the end of the war. In spite of bitter public criticisms the Shidehara administration insisted on paying indemnity to war industries on the theory that such a policy was necessary to speed up general recovery. The Allied directive of November 24, 1945, approved indemnification on condition that the payments be frozen in special accounts at the Bank of Japan to be withdrawn with Allied approval. It also required the return to the national treasury and the freezing of all indemnity payments above ¥5,000 made after August, 1945.

The freezing of indemnity payments has the effect of diminishing inflationary pressures because it prevents an immediate flow of huge public funds into the income stream. To the extent that war indemnity payments are cancelled by taxes, inflationary borrowing is minimized. Furthermore, the freezing of indemnity payments has a better effect on business incentives than a drastic policy of abandoning them would have. To the extent, therefore, that business incentives are improved by a policy of paying indemnity to corporations, production may be increased and thus reduce inflationary pressures. This is perhaps why the Allied Command has agreed, on principle, to the payment of war indemnity.

A more positive measure against inflation is the new capital levy and the property value increase tax commonly known as "a war-profits tax."

[18] *Rin*=1/10 of a *sen*; *sen*=1/100 of a *yen*.

The capital levy against corporations has been abandoned because of the inflationary implications of paying with debentures. As a result of a series of amendments, a capital levy is applicable against every individual owning cash, land or securities worth more than ¥30,000, with a flat exemption of ¥3,000. The rates range from 10 per cent on amounts under ¥40,000 to 85 per cent on amounts over ¥50,000,000. The estimated revenue from this source is ¥80 billions. As for the property value increase tax, it covers increases in property values between 1940 and 1946. The rates range from 60 per cent on amounts under ¥100,000 to 100 per cent on amounts over Y300,000. This tax, however, is deductible from the capital levy. Furthermore, property continuously held during the period, except securities, is exempted. The tax is expected to yield approximately ¥15 millions.

For purposes of collection tax-payers have been divided into three classes, namely, Class A consisting of property owners with more than ¥500,000, Class B with ¥100,000 to ¥500,000, and Class C those below ¥100,000. The order of collection is Classes A, B, and C. They are all expected to pay most of the property taxes within the fiscal year 1946, but because of the need to liquidate holdings some delayed payments are considered inevitable. For this reason two years is set as a limit. Thus, both the period and the method of collection are calculated to have anti-inflationary effects. Moreover, the revenue from these property taxes will go a long way toward balancing the budget, thus preventing inflationary public borrowing and spending. It is probable that some property owners will dishoard the supply that they hold in order to pay the taxes. This would increase the total commodity supply and, hence, keep prices down. Against this must be weighed the possibility that the taxes may somewhat reduce business incentives and thus retard production.

The Allied directive of November 24, 1945, also required the termination of payment of all military service pensions after February 1, 1946. This measure is to remove an annual burden of ¥1.5 billions. In terms of the estimated outlay for the fiscal year 1946, this sum represents a nearly 11 per cent saving. The measure materially helps toward balancing the budget and also prevents a net addition to the money supply.

Perhaps the most important fiscal measure against inflation is the new policy of balancing the national budget. For deficit financing has been the greatest single cause of inflation. The 1946 budget consists of a total revenue of ¥13,328,391,000 and a total outlay of ¥12,813,885,000.[19] In contrast, this latter figure amounts to only 12 per cent of the total outlay approved for the fiscal year 1945. Taxation dominates the

[19] *Yomiuri Hochi*, Dec. 6, 1945.

revenue side. According to Finance Minister Shibusawa, the estimated total revenue for the fiscal year 1946 consists of 77 per cent from taxes, 14 per cent from government business, and the rest from unspecified sources.[20] This great reliance on taxation is as it should be during inflation, but the government plan to increase consumption taxes has been severely criticized.[21] However, it is undeniable that consumption taxes, together with property taxes and other levies, supplement the monetary measures already mentioned in reducing the money demand. A great deal depends on how much and how soon these taxes will absorb the excess of cash balances.

Supplementary Measures

Supplementary anti-inflation measures have to do mainly with the supply side. The Allied directive of September 22, 1945, gave priorities to the production of food, clothing, and housing in the allocation of raw materials, equipment, and labor. The government has abandoned the price control of fresh foodstuffs in order to stimulate food production, and has also stopped the rationing of clothing. Thus, both the Japanese government and the Allied Command are encouraging the production of consumers' goods. Some encouraging results were already discernible toward the end of 1945.[22]

Nevertheless, the production of consumers' goods still lagged behind that of producers' goods. For instance, coal output in February, 1946, reached 35 per cent of the 1935–37 average and electric power 90 per cent, but manufactured goods only 9 per cent.[23] It is interesting to note, in this regard, that the Mitsubishi plant in Kyoto, which produced planes during the war, has started automobile production and that other former war plants are following suit. However, these are exceptional cases, for the production of consumers' goods is being carried on largely by medium and small factories which have survived air raids.

Foreign trade approved by the Allied Command, though small in extent, will also improve the supply situation. The total value of exports for 1946 is estimated at 25 per cent of the 1934–39 average. The foreign exchange thus obtained is to be used to pay for the imports essential to the maintenance of "the minimum standard of living." A net addition to the supply of goods, which imports imply, will help keep

[20] *Loc. cit.*

[21] See Prof. Y. Kazahaya, *op. cit.*

[22] Soon after the surrender some 50 textile factories started producing civilian clothes. (*Mainichi*, Oct. 3, 1945.) Toward the end of 1945 pots and pans, electric plates, buckets, needles, shoes, matches, electric bulbs, radios, bicycles, and other consumers' goods began appearing in the market, though in small quantities. (*Nippon Times*, January 6, 1946).

[23] *New York Times*, April 1, 1946.

domestic prices down. This addition is not likely to be offset by a net loss incident to commodity exports, for such exports exclude those commodities which are urgently required by domestic consumers. Moreover, imports are expected to have the effect of frightening merchants and farmers into dishoarding much of the supply that they hold in anticipation of higher prices. The United States is at present supplying a certain amount of food to Japan in order to "protect American forces against starvation riots." This American food policy in Japan also helps to reverse the inflationary trend.

The new land law is likely to affect inflation. According to the new law all farm rentals must be paid, not in kind as was the case before, but in money. In view of the fact that farmers have paid in the past as much as 70 per cent of their rentals with crops, the amount of cash that they now need for the payment of rent will be proportionally large. In order to obtain cash farmers would dishoard the stock on hand or sell new produce to urban areas. This would increase the food supply in urban areas and hence keep the cost of living in those areas from rising. Moreover, the resultant transfer of income from towns to the country would reduce urban purchasing power, and consumer spending with it. On the other hand, the change in the method of payment from kind to money in rural areas may become such a big institutional factor in the velocity of money as to offset the above anti-inflationary effects somewhat.

Conclusion

The foregoing analysis of the various methods of controlling inflation in Japan shows that, on the whole, these methods are too indirect and too negative to be highly effective in the immediate post-war period. Thus far monetary measures have proved more effective than fiscal ones simply because it takes time for the full impact of the latter to make itself felt. Of all the measures taken, the balancing of the budget is of crucial importance. The net results thus far have been to keep inflation from assuming greater proportions. But this must be considered a success in view of subnormal production. Japanese experience compares favorably with French, Belgian and other European experience. It should be mentioned that the degree of success Japan has achieved in combating inflation is a favorable commentary on Allied economic policy.

In order to overcome inflation completely much more is required than fiscal and monetary measures. Fiscal-monetary policy needs to be coördinated with price, wage, and production policies. The present system of rationing is not coupled with rigid price control. Black marketing can be minimized by more rigid price control, although it cannot be eliminated except by increasing production. The abolition of production

control was premature, indeed. Thus far the newly organized trade unions have refrained from strikes in order not to retard production. But they will in time demand higher wages to match the higher cost of living. Yet there is no wage policy on the part of the government to forestall the possibility of a race between wages and prices. If inflation persists despite all the measures taken, Japan may find it necessary to adopt such rigid economic controls as proved effective during the war.

There are non-economic factors which are conducive to the eventual control of inflation in Japan. The unified Allied Command under American leadership facilitates the execution of the Japanese government's anti-inflation program. The inclusion in the Diet of more democratic elements as a result of the recent general election is bound to have a favorable influence on the effort to control inflation. Increasing political stability will raise business confidence and hence encourage greater production. The growing democratic movements in other countries will certainly have favorable repercussions in Japan. These developments are likely to affect the Japanese economy even in relatively short periods, with the result that the fiscal and monetary measures against inflation will be greatly reinforced.

ECONOMICS IN THE WAR PERIOD*

By Paul T. Homan

I. *Pre-War Trends in Economic Thought*

Economics is sometimes regarded with some show of envy by other social scientists because of its reputation for having a more precise analytical discipline than they have ready to their hands. This is no doubt in a degree true, but the advantage is not at all times very clear to economists who are struggling against the weaknesses and imperfections of their discipline and trying out exploratory innovations. So far has the experimental spirit carried during the past three decades that it is hardly correct to say that there exists an agreed discipline of economic analysis. Rather there is a series of more or less inter-related disciplines in a degree complementary, in a degree competitive, with some difference of opinion concerning what is complementary and what competitive.

Since all sciences except mathematics are compounded of a body of objective phenomena, a body of analytical method wherewith to establish or state the relations between phenomena and a statement of established relations, an essential preliminary to analysis is to delimit the phenomena or aspects of phenomena which are the subject of analysis. It is perhaps in the supposed existence of an economic criterion or benchmark, even more than for its analytical technique, that economics has been the object of envy. This criterion was historically the principle of "value" based upon rational self-interest. Since, however, the curiosity of economists has not been limited to aspects of phenomena falling within that principle, the boundaries of the science remain vague, in particular as they encompass the non-rational areas of behavior and the areas of collective action, or as they comprehend relations which are not to be approached through a psychological principle.

A great deal of what is included within the scope of economic literature does not, in fact, involve very much in the way of theoretical anal-

* This paper was written by request for inclusion in a forthcoming volume dealing with social and humanistic disciplines, 1939–1945, soon to be published by the American Council of Learned Societies. It is printed in the *Review* by kind permission of the Council. The circumstances under which it was written make it highly imperfect both in topical analysis and bibliographical reference. While persons who have seen it in draft have, nevertheless, suggested that publication in the *Review* would be useful to economists who have not been able to follow the wartime literature, I must urge that it cannot serve as a substitute for careful scrutiny of the book reviews and the book and periodical lists which have appeared in the *Review*. For the failure to mention important books, I can only plead inability on short notice to establish satisfactory acquaintance with the merits of all books over the whole range of economic publications.—P.T.H.

ysis. It is largely descriptive, establishing the institutional picture—as in describing the character of the banking system, the financial markets or the War Labor Board—and identifying particular types of economic problems. Since there are many such areas, some of them extremely complex, economists tend to become specialists in terms of their interest in institutions and, to the extent that this is so, while contributing to knowledge, they may contribute but little to the broader analysis of economic relations. It is, however, in the latter field that what may be called the development of economic thought and science takes place, a process generated by a very few ingenious minds though elaborated by many.

In the inter-war years various trends of thought, or fads, to take the worst view of some of them, were given expression. While it is difficult to disentangle them, the following series expresses roughly the character of the developments.

1. The most pronounced trend, speaking negatively, was away from reliance upon analysis of the processes of the atomistic market as the primary content and concern of economic theory.

2. In point of time, just after the first world war, the positive trend was that designated as "institutional," carrying with it emphasis upon (a) descriptive monographs, (b) non-rational psychological factors and therewith a blurring of the distinctions from other disciplines, (c) quantitative (statistical) analysis, (d) as a central analytical problem, the explanation, or at least description, of the business cycle in unorthodox terms, and (e) the application of economic analysis to problems of social control.

3. In minds less prone to unorthodoxy there was still a growing recognition of the hiatus which separated three areas of theoretical analysis, namely, value theory, monetary theory, and cyclical theory.

4. In the more classical tradition, the partial equilibrium analysis of Marshall was broadly supplemented by the introduction into American thought of the general equilibrium theory and therewith a tendency to conduct theoretical analysis in more completely mathematical terms.

5. Also related to the classical tradition, there was a departure from the competitive and monopolistic assumptions of equilibrium theory and a development running in terms of "imperfect" and "monopolistic" competition—a development which led to emphasis upon the "theory of the firm" rather than of the broader market and tended to so great a fragmentation of analysis as seriously to threaten the whole foundation of general theory.

6. Early experiments in cyclical theory opened out into a general effort to establish a theory of economic dynamics which was capable of introducing the time element and of establishing the temporal relation-

ship between variable economic quantities. The approaches were both statistical and mathematical.

7. It was a long-standing frustration on the part of many economists that economic theory gave no answers directly applicable to questions of economic policy, and the dynamic analysis was looked to for some change in this situation.

8. During the years immediately prior to the second world war the tune of economic analysis was very largely called by Keynes whose *Treatise on Money*, first, but more particularly his *General Theory of Employment, Interest and Money*, made the only connected attack upon a number of the points enumerated above. While the mold of the *General Theory* was that of equilibrium analysis, its suggestiveness lay in the field of dynamics. Its emphasis lay away from the so-called micro-economic analysis of classical theory and toward macro-dynamics, or the explanation of temporal changes in economic aggregates such as aggregate savings, investment, demand and employment. By finding answers in terms of monetary and fiscal policy, it provided a bridge (however treacherous) between theory and policy.

9. Oriented by Keynes toward aggregates and toward policy, much economic analysis has recently centered around the development of techniques whereby the nature and magnitude of aggregate economic adjustments can be experimented with in hypothetical figures and into which it is hoped that real data can be introduced as an instrument for economic prognostication, policy and control.

10. It may be truthfully said that, at the beginning of the second world war, however usefully economists may have been employed in other lines of description and analysis, in so far as they were concerned with problems of general economic theory they were largely (a) exploiting and extending Keynes's theory as a substitute for other theory, (b) adapting Keynes into their pattern of thought, or (c) attempting to exorcise the Keynesian "errors."

11. The net result of the intellectual ferment of the inter-war years was to create a great variety of ingenious devices for extending economic analysis and to present many economic relations and problems in new lights without having led to any general consensus concerning what would be ephemeral and what permanent. The conceptual instruments and analytical techniques of economics had been greatly enriched, but the degree of their direct applicability to questions of policy was problematical. The setting for new applications of analysis to policy had been the years of depression. While the new analytical apparatus was applicable to other circumstances, its policy applications to other circumstances were by no means clear or unambiguous

12. Bearing upon the narrower technical sphere of theory and anal-

ysis were the broader questions of basic economic philosophy. It is not to be doubted that many economists, especially younger ones, had little emotional loyalty to the capitalist system as they knew it and were in some sense arranging their thoughts in relation to a more controlled economy which they thought to be either inevitable or desirable.

13. The intellectually fascinating territory which economists had been exploring just prior to the war had the effect of engrossing them in their own discipline, so that the strong trend just after the first world war toward a closer association with the other social sciences had been largely dissipated. This fact had certain deplorable consequences in that many young economists, while achieving a remarkable technical competency in economic analysis, operated within an unduly superficial social context.

In such a condition economics entered the war and in much the same condition it emerges from the war, since the circumstances during the war were not such as to engender much theoretical development. Along the way, however, some economists have had the opportunity to try out their concepts and methods, in the analysis of wartime problems and post-war prospects. A notably able group of younger economists has emerged, and it is in the areas of discussion and argument which they carry on among themselves that interest now largely centers.

As always happens, any discussion of trends in economic theory exaggerates the differences among economists. It has often been observed, however, that the more concrete the phenomena and the more restricted the relations to which any group of economists must address themselves, the more nearly their practical judgments coincide. So it has been during the war, and large numbers of economists have worked together in unity and harmony in a great variety of tasks for which their type of training in critical analytical thought had prepared them well.

II. *Wartime Economic Publications*

That the concrete subject matter of economic study is varied and complex is illustrated by the fact that in the *American Economic Review* publications are classified under 22 headings, many of which are themselves multiple. Since publication continued at a relatively high level during the war, it is clearly impossible in short compass to give a comprehensive review of the wartime literature. Attention will therefore be limited to identifying certain trends in the literature and to noting outstanding publications, at the unavoidable cost of seeming invidious in matters of including and excluding particular titles.

Books

Relatively little is to be found in the more conventional areas of theoretical writing. In the history of doctrine, J. J. Spengler produced a

noteworthy volume on *French Predecessors of Malthus* (1942), G. J. Stigler brought out *Production and Distribution Theories, the Formative Period* (1941) and S. L. Levy, a volume on N. W. Senior (1943). E. Whittaker produced a general textbook in this field.

A. W. Marget in 1942 published the second volume of his monumental *Theory of Prices* which included an elaborate refutation of the Keynesian "heresies." Other volumes of considerable merit which carried forward pre-war trends of theoretical discussion were *The Theory of Competitive Prices* (1942) by G. J. Stigler, *Monopolistic Competition and General Equilibrium* (1940) by R. Triffin, and *Anticipations, Uncertainty and Dynamic Planning* (1940) by A. G. Hart. A unique, formidable and quite unclassifiable mathematical contribution to economic analysis, especially with respect to the interesting economic problems of monopolistic competition, appeared in *The Theory of Games and Economic Behavior* (1944) by J. von Neumann and O. Morgenstern.

Certain other volumes, though oriented toward special subject matters, were also of particular interest as developments or applications of analytical method. Among these may be especially noted *A Theoretical Analysis of Imperfect Competition, with Special Reference to Agricultural Industries* (1941) by W. H. Nichols, *General Equilibrium Theory in International Trade* (1944) by J. L. Mosak and *International Trade and the National Income Multiplier* (1943) by F. Machlup.

Perhaps the most ambitious theoretical work published in the war years was *Economics of Control* (1944) by A. P. Lerner, which represented the apotheosis of the extensive pre-war writing on "welfare economics." Though incorporating a Keynesian viewpoint, it deals broadly with the basic problems of optimum allocation of economic resources, attempts to define the proper rôle of government in this process, and without equivocation assigns to economists the rôle of formulating and evaluating economic policies in the social interest. In defining the rôle of government, Lerner relies heavily upon the use of the fiscal powers, developing his theory of "functional finance," and in that respect the book merges into the literature of business cycles and "full employment" noted below. In somewhat the same orientation but of more limited scope is *Price Flexibility and Employment* (1944) by O. Lange. Another volume of outstanding interest is *The Theory of Capitalist Development* (1942) by P. M. Sweezy.

A considerable number of general textbooks appeared during the war in new or revised form of which, it may not be too invidious to suggest, *Economic Analysis* (1941) by K. E. Boulding and *Economic Analysis and Public Policy* (1943) by M. J. Bowman and G. L. Bach have a special interest by reason of incorporating the newer analytical techniques into elementary instruction. The same may also be said of *The Social*

Framework of the American Economy by J. R. Hicks and A. G. Hart, adapted from Hicks's British original.

A considerable literature developed in what may roughly be called the field of business cycles, some of a strictly theoretical and analytical character, some merging into discussions of war finance and the problems and policies of the post-war world. Just prior to the war there had been two notable contributions to this field, *Business Cycles* (1939) by J. A. Schumpeter and *Prosperity and Depression* (revised 1941) by G. Haberler, the latter contributing a noteworthy summary of the recent literature of the subject. A republication of outstanding articles in the field was presented in *Readings in Business Cycle Theory* (1944).

Pre-war thought in this field, giving effect in various degrees to the Keynes influence, was represented by a group of books published after 1940: *Fiscal Policy and Business Cycles* (1941) by A. H. Hansen, *Investment and Business Cycles* (1941) by J. W. Angell, *Full Employment* (1941) by J. H. G. Pierson, *Deficit Spending and National Income* (1941) by H. H. Villard, and *The Creation of Purchasing Power* (1942) by D. McC. Wright. Hansen's volume crystallized a great body of earlier analysis in the Keynesian vein to suggest the broad use of the fiscal powers of government as a means to economic stability. Pierson's book placed its emphasis upon the use of such powers to support aggregate consumption directly, rather than upon the usual Keynesian device of supporting investment to offset savings. The type of analysis presented by such books was widely popularized, even vulgarized, in lesser works. A number of textbooks and other contributions to cyclical discussion appeared especially in the early years of the war.

The literature which proposed to utilize the borrowing powers of the government without assignable limit as the instrument for achieving and maintaining full and stable employment provoked a reaction, both against the assumptions upon which their long-range outlook was predicated and against the presumably dangerous consequences of the proposed policies. This counterattack is not well represented in much writing of high quality, but may be seen at its most emphatic in *The Bogey of Economic Maturity* (1944) by G. Terborgh and *The New Philosophy of Public Debt* (1943) by H. G. Moulton. Such views also have been vulgarized and have given rise to defenses of the *status quo* which are no part of the sober judgment of the responsible economists.

The type of literature outlined immediately above, while technical in character, has points of contact with certain other deep-seated conflicts of social and economic philosophy, which may be roughly described as lying between those who are less addicted and more addicted to the liberal philosophy, in the old-fashioned meaning of the phrase. This divergence of view is more easily illustrated in the English literature.

Hayek's *Road to Serfdom* brought rejoinders in book form from Finer and Wootton, while the liberal writings of Hutt and Fisher, for example, run strongly counter to those of Keynes, Beveridge, Kaldor, and the Oxford Institute of Statistics authors of *The Economics of Full Employment*. The variations of theme between more planning and less planning are too numerous to review briefly, but the two orientations are quite clearly discernible. In the United States, the most extreme statement of the liberal viewpoint during the war was in two books by L. von Mises, *Omnipotent Government* (1944) and *Bureaucracy* (1944). Sober analysis of the social problems of a liberal world are to be found in *Social Goals and Economic Institutions* (1942) by F. D. Graham and *Capitalism, Socialism and Democracy* by J. A. Schumpeter. Toward the "planning" side were a number of volumes of which *The Unfinished Task: Economic Reconstruction for Democracy* (1942) by L. Corey, is representative.

As the circumstances first of the defense program, and then of the actual state of war, overtook the United States, the attention of economists turned increasingly to the economic problems of war. Several general books and symposia on the economics of war appeared and a certain amount of rather desultory writing upon the physical aspects of preparation for war. The most elaborate and cogent economic analysis of the early war years was, however, devoted to the fiscal aspects, in particular to the problem of inflation. Oddly enough, or perhaps because it had been adequately done before, there was very little discussion like that during the first world war about how a war is "really financed" as between present and future generations as a result of taxing or borrowing. The shades of Pigou, Bickerdike, Seligman, Hollander, Davenport, *et al.* took care of this problem.

Much of the best discussion of the fiscal problems of war took place in the periodical literature. Much of it also was done in unpublished memoranda in government offices. There were, however, a number of substantial books on the subject, including *Paying for Defense* (1941) by A. G. Hart and E. D. Allen, *Fiscal Planning for Total War* (1942) by W. L. Crum, J. F. Fennelly and L. H. Seltzer, *A Treatise on War Inflation* (1942) by W. Fellner and *Taxing to Prevent Inflation* (1943) by C. Shoup, M. Friedman and R. P. Mack. Even in this field, Keynes rather led the way with ideas presented in his *How to Pay for the War* as well as concepts from the *General Theory*.

Theories of the process of inflation ran generally in terms of the general amount of demand for goods relative to their supply. After "full employment" is reached and output is no longer expansible, expansion of government war spending (or private investment) over what people will be willing to save at full employment, will give rise to an "inflationary gap." The government will get its war material, but only by bidding

up prices. But the price rise only "closes the gap" in a momentary sense. The higher value of output and sales constitutes the profit or wage income of the community, and again there is an incipient inflationary gap. Thus, inflation would tend to proceed at some compound-interest rate, the exact speed depending upon the magnitude of war spending in comparison with civilian saving, the extent to which wage demands rather than profits absorb the higher costs, the time-lag between the receipt of income and its expenditure, forward speculation, etc. The prescribed preventatives ran to extremely severe income and spending taxation or heavy borrowing—forced if necessary—out of incomes which would otherwise be spent on consumption.

In practice, the fiscal measures adopted were much less severe than those proposed by economists. Since inflationary developments were far less marked than was feared, one is in retrospect compelled to conclude that almost all economists underestimated the extent to which direct controls and increased production could hold the price line and organize the war effort.

One interesting by-product of the wartime fiscal analysis was some very interesting technical development in the processes of analyzing and anticipating changes in the national income. There developed some difference of professional opinion as to whether it is preferable to use rough objective data largely admixed with personal judgment or to use precise but arbitrary data as the basis for forecasting.

The arts of national income and employment forecasting became even more engrossing as economists began to look forward to the post-war period and to consider the character and magnitude of the readjustments to be made therein and the means to rapid reabsorption of the working population in peacetime pursuits. Not very much of the elaborate discussion of these matters has reached book form. A good deal of the analysis followed the "offsets-to-savings" method of income analysis—but with widely varying results. The pattern of saving against income was estimated from past data on national income, consumption, and savings, and from family-budget studies. Allowances were made for backlogs of war-deferred demand for consumers' durables and for the accumulations of wartime liquid wealth and savings. Investment forecasting was recognized as more difficult. One school tried to use past statistical regressions against incomes. Others objected to this, saying that this only gave one back in concealed form the *saving schedule* and not an *investment schedule*. They preferred to use their qualitative judgment. In general, though not uniformly, the former method produced optimistic guesses, while the latter ordinarily came out with relatively low long-run private investment and a need for aggressive fiscal policy.

The pessimists went awry in their forecasts of a deep slump and large unemployment immediately following the war primarily because consumption expenditure, particularly in the non-durable categories, turned out to be very much greater than anyone had expected from previous patterns. There is irony in the fact that those who were most right during the war—as compared to the repeated forecasts of the "wolf of inflation" by reason of underestimation of the country's productive capacities and the efficacy of direct controls—later proved to be most wrong. It would appear that forecasting is still a black art. But economists who strongly believe in fiscal means of maintaining full employment must assume the possibility of improvement in this respect, since timely anticipation is the very heart of the effective use of such means. It is, indeed, upon this practical question, rather than upon the validity of the theoretical analysis, that the judgments of many economists part company.[1]

A convenient introduction to some current methods of national income and national product accounting, including the relations between public expenditure, private investment and consumption is to be found in *National Budgets for Full Employment* (1945) published by the National Planning Association. Various aspects of post-war programs and prescription are to be found in *Present Savings and Postwar Markets* (1943) by S. H. Slichter, *Markets after the War* (1943) by M. Livingston, *Demobilization of Wartime Economic Controls* (1945) by J. M. Clark, *Postwar Economic Problems* (1943) and *Economic Reconstruction* (1945) both edited by S. E. Harris, *Financing American Prosperity* (1945) edited by P. T. Homan and F. Machlup, and *The Economics of Peace* (1945) by K. E. Boulding. Problems of post-war economic policy have also been dealt with in a highly competent fashion in a series of studies sponsored by the Committee for Economic Development, including a valuable summary policy statement in *Jobs and Markets* (1946).

The great potential importance of national income accounting lends special weight to the fundamental scientific works of S. Kuznets, *National Income and Its Composition*, 2 Vols. (1941) and *National Product in Wartime* (1945), as well as to the later volumes in the series, *Studies in Income and Wealth*, published by the National Bureau of Economic Research. In this connection, mention must also be made of the expansion and improvement of national income studies in the Department of Commerce and publication in the *Survey of Current Business* of income data which was basic to current discussion of the economic outlook.

[1] The form of the preceding five paragraphs is largely based upon notes supplied by Professor P. A. Samuelson.

The preceding survey perhaps adequately presents the primary trends in economic literature during the war, but it leaves out of account many useful, and a few notable, books in various special fields.

There was a considerable amount of publication in the field of economic history of which by far the most notable was M. Rostovtseff's three-volume *Social and Economic History of the Hellenistic World* (1941). C. W. Wright completed his long-awaited *Economic History of the United States* (1941).

After 1939 there appeared the two-volume survey of *Government and Economic Life* (1940) edited by L. S. Lyon. Notable earlier articles were republished in *Readings in the Social Control of Industry* (1942). The numerous hearings and monographs of the Temporary National Economic Committee also appeared, giving rise to a considerable grist of later books on the institutional structure of the American economy. A supplement to the *American Economic Review* containing articles on the work of the TNEC was issued in 1942.

Outstanding, but difficult to classify because it is several books in one, is N. J. Silberling's encyclopaedic *Dynamics of Business* (1943). It might perhaps be placed with the cyclical literature since it analyzes trends, cycles and time relationships since 1700 and their bearing upon government and business policies, giving emphasis to the inconsistency of the manner in which capital and credit resources have been used with continuous and orderly expansion. In the field of business organization and practice, outstanding titles have been *Price Making in a Democracy* (1944) by E. G. Nourse and *Business as a System of Power* (1943) by R. A. Brady, the latter a relentless unveiling of the textbook story of business as a system of service.

In the monetary and international fields one finds *The Gold Standard Reinterpreted* (1940) in two volumes by W. A. Brown, Jr., *Exchange Control in Central Europe* (1943) by H. S. Ellis, excellent textbooks by H. L. Reed, G. N. Halm and L. V. Chandler and other useful studies by J. Viner, E. Staley, A. H. Hansen, N. S. Buchanan, C. B. Hoover, P. T. Ellsworth and others. The extensive discussions surrounding the international monetary conferences gave rise to descriptive and analytical accounts by G. N. Halm and M. A. Heilperin.

There was extensive publication in the field of labor economics, with special interest attaching to *Union Policies and Industrial Management* (1941) by S. H. Slichter, *The Dynamics of Industrial Democracy* (1942) by C. S. Golden and H. J. Ruthenberg, *Wage Determination under Trade Unions* (1944) by J. T. Dunlop, and the third and final volume of the monumental *Economics of Labor* by H. A. Millis and R. E. Montgomery. In a notable volume, *From Relief to Social Security* (1941),

Grace Abbott epitomized a critical decade of the development of thought on this subject.

Finally, certain spheres of technical interest remain to be mentioned. A substantial amount of work was done, especially at the National Bureau of Economic Research, on the development of statistical cost functions, pioneered by J. Dean, epitomized in *Cost Behavior and Price Policy* (1943) and discussed controversially in the periodical literature. Some considerable progress was made during the war in the statistical techniques for measuring economic relations and in this connection the work of T. Haavelmo and others at the Cowles Commission will no doubt receive increasing attention. Among the outstanding publications of the Commission were *The Probability Approach in Econometrics* by T. Haavelmo and *Studies in Mathematical Economics and Econometrics.* W. W. Leontief's "tableau" of the economic system in his *The Structure of the American Economy* and other publications presented an extremely interesting innovation in economic analysis.

The Economic Journals

The preceding survey of economic publications in book form is far from telling the whole story. Much of the seminal thinking in economics, as well as more pedestrian material, is normally published in the economic journals. The same was in a measure true during the war, although it was in considerable degree impaired by the fact that most of the economists who might have contributed most effectively to current discussion were employed in war agencies and either not in a position to publish or otherwise too busily engaged to do so.

All the economic journals succeeded in maintaining regular publication during the war, the *American Economic Review* at about its normal size and the *Quarterly Journal of Economics*, the *Journal of Political Economy* and *Econometrica* at less than normal size.

Running far ahead of all other topics in number and volume was that of public finances and fiscal policy in a great variety of ramifications. During the early period of the war considerable attention was given to the inflationary potentialities of wartime borrowing and expenditures and to analysis of the inflationary process and of the so-called inflationary gap. A good example is a paper on "The Inflationary Gap" by Walter Salant. Later the discussion turned to problems which may generally be described as "the burden of the debt" and to various detailed aspects of fiscal policy and administration.

Beyond this the contents of the journals ran very largely to the normal pattern of special institutional studies of one sort or another. Just before and after the beginning of American participation in the war, there was a

considerable run of articles on monetary reform and on a variety of aspects of industrial organization and policy, much of it an aftermath of the investigations of the Temporary National Economic Committee. Later the articles were more topical to the war economy, as in papers on price regulation, labor controls, raw materials controls, and forward glances toward liquidation of war economy or advanced proposals for annual wages. Illuminating and interesting in detail, none of these articles stand out as especially striking contributions to thought or knowledge.

The articles in the conventional spheres of theoretical analysis were not numerous nor especially distinguished. There was a considerable spate of articles on "the stability of equilibrium" and upon "the multiplier," two articles on "The International Trade Multiplier" by L. A. Metzler being especially outstanding. Useful contributions to methodological discussions were made by a number of writers.

The Keynesian theme ran strong in much of the periodical literature, not, however, to any great degree in abstract theoretical developments, but rather in the orientation of discussions of fiscal policy on the one hand and in the formulations of models for use in economic forecasting on the other. In this connection mention may be made of an article on "Fiscal Policy and Income Determination" by P. A. Samuelson. In a rather outstanding appraisal, D. McC. Wright brought to focus the terms upon which Keynes might be absorbed into the fold of economics, rather than routing and replacing the flock.

Toward the end of the war and just afterward, there crept into the journals what were, indeed, but faint echoes of the methods and results of experiments in forecasting by which government economists were attempting not merely to prognosticate the post-war employment and production conditions, as a basis for reconversion policies, but also to lay the basis for more permanent types of "national budgeting." Articles by A. Smithies and J. Mosak on "Forecasting Postwar Demand" and by Hagen and Fitzpatrick on "National Output at Full Employment in 1950" illustrate developments in this interesting field.

The mildly interesting and relatively mediocre character of the contents of the journals during the war, especially in its later stages, was in marked contrast to the intense intellectual effort, inventive ingenuity and tough controversy which was concurrently going on among the more able government economists. The circumstances of wartime presented a sort of impasse in that enough fertile thought was going into inter-office memoranda to fill whole issues of journals on various economic subjects, but it could not be presented to readers at large either because it was included in restricted documents or because those responsible were too

preoccupied to prepare manuscript for publication, or both. The ferment of thought and analysis, and its implications for basic policy, have therefore only begun to be fully conveyed to the broader ranks of economists in post-war periodical articles.

III. *The American Economic Association*

During the years since 1939, the post of President of the American Economic Association has been held by F. C. Mills, S. H. Slichter, E. G. Nourse, A. B. Wolfe, J. S. Davis, and I. L. Sharfman in that order. During the war years it was impossible on account of transport difficulties to hold the usual annual meetings but, even so, local meetings were held in Washington where so many of the country's economists were concentrated. The programs were for the most part devoted to analysis of the economic problems of war and of the post-war period. Annual volumes of papers and proceedings of normal pre-war size were issued as supplements to the *American Economic Review*.

During the war years the Association engaged in an unusual number of activities through special committees. These included committees on Book Reviewing, Re-publication of Articles, Economists in the Public Service, Research, Source Book of Economic Statistics, Undergraduate Teaching of Economics and Training of Economists, and Development of Economic Thinking and Information. The last-named committee has proposed a periodic volume to be known as the *Review of Economics* and as a first volume a review of contributions to economics during the war years as an aid in the "reconversion" of economists.

IV. *Wartime Activities of Economists*

The exigencies of the organization for war were such as to constitute a draft of a large fraction of the economists and economic statisticians for wartime service in government agencies—not only of economists of established position and reputation, but also of younger men down to most of the graduate students who were not caught in the military draft. For satisfying this demand for economists, the events of the years since 1933 had furnished a substantial foundation, in that considerable numbers of economists had been concerned with initiating and staffing the economic measures of the Roosevelt administration, and there had been built up in Washington a staff of civil servant economists distributed through numerous agencies. These furnished a pool which was freely drawn upon to staff the expansion of wartime agencies.

Starting in 1940 there began, in addition, an invasion of the colleges and universities to recruit economic advisers and consultants for the Advisory Council on National Defense. As this body subdivided into

the various "defense" agencies in 1941, the demand increased and, after Pearl Harbor, reached such proportions that many campuses were largely stripped of their teaching personnel.

Roughly, the services called for can be divided into five broad fields, those concerned with (1) price control and rationing, (2) the physical preparation for war, (3) the fiscal and financial aspects of war, (4) the mobilization of manpower, and (5) economic intelligence.

Without doubt the sphere in which economists played the largest part was that of price control and rationing. The system was largely conceived and put into operation by economists who for a period made up the bulk of its administration as well as its technical staff. The first chief was Leon Henderson, a government economist. Early recruits were Donald H. Wallace and Paul M. O'Leary who rose to high administrative posts in the Office of Price Administration, the latter becoming the chief rationing officer of the United States. J. K. Galbraith became chief price control officer. Richard Gilbert became head of a far-flung research organization. It is, however, invidious to mention names, because the roster of OPA contained so large a number of the best-known economists in the United States. Some like J. M. Clark, who were not regular members of the organization, served as part-time consultants.

The use of economists in the OPA was by no means confined to the administrative and research staff in Washington. They were equally drawn upon to staff, and frequently to head, the regional offices. The predominance of economists in the operations of OPA came to an end when, in response to the furore which was whipped up against "the professors," the Congress in 1943 passed a provision which debarred them from high administrative posts, in the sphere of price control. Many moved away to other activities, but a great number remained, some in high advisory posts and others at every level in research, analytical and secondary administrative posts. Economists were without question the architects and builders of OPA, one of the most essential and in a broad sense successful of the war agencies.

The place of economists in the War Production Board was of necessity much less marked since the organization of the nation's productive resources for war was primarily a task for members of industry. Even so, the part played was very large. Economic statisticians in particular had a large part and devised and operated the system of statistical records upon which the central planning and control of war production was dependent. At the head of this work was Stacy May aided by R. R. Nathan, E. B. George, M. A. Copeland and other able lieutenants, with a staff running into hundreds. The central control instrumentalities, such as the Requirements Committee and the Controlled Materials Plan, were largely devised and staffed by economists, some of whom took

important administrative posts and one of whom, Lincoln Gordon, eventually became Program Vice Chairman. The Combined (Anglo-American) Boards were similarly staffed primarily with economists and statisticians. T. Blaisdell served as U. S. Minister in London, heading the Mission for Economic Affairs during the latter part of the war.

Less extensive, but still marked, was the part played by economists in the other agencies concerned with the physical aspects of war, especially in their planning and control aspects, such as that of R. M. Bissell in the War Shipping Board, C. A. Dearing in the Office of Defense Transportation, and Isador Lubin in the Munitions Assignment Board.

Of similar character and importance were the positions of William Haber, J. D. Brown and others on the side of planning the utilization of the labor force in the War Manpower Commission and the War Production Board, of the many economists in the service of the War Labor Board, and of L. Currie, F. V. Coe, J. W. Angell and others in the activities of the Foreign Economic Administration.

On the side of fiscal and financial affairs, the technical staffs of the Treasury Department, the Bureau of the Budget, and the Federal Reserve Board were expanded and exerted a broad influence upon policy. Under the leadership of Harry White, economists worked out the American plans for international financial institutions, represented the country at the Bretton Woods Conference, and have taken important posts in the new organizations. In addition to the services of their regular staffs, the Treasury called in such experts as C. A. Shoup, and the Federal Reserve Board such as A. H. Hansen, G. Haberler and H. S. Ellis, to engage in fundamental studies. R. Triffin performed outstanding work for the Federal Reserve Board in connection with the reorganization of central banks in Latin America.

Not the least important, but least publicized, field of wartime service for economists was the far-flung research conducted in direct support of military operations, partly in the Board of Economic Warfare, but mainly in the Office of Strategic Services, an operation which brought some economists, especially E. S. Mason, into the upper tiers of intelligence officers. W. Riefler served as U. S. Minister in charge of economic warfare in London.

The armed services, while they greatly expanded their statistical services, did not call upon economists in any degree comparable to the civilian agencies, though scattered through their analytical branches were a considerable number, especially younger men in uniform.

In the aftermath of the war, one striking development has been the movement of economists into the vastly expanded economic sphere of the State Department. This movement started during the war, especially in preparations for making the peace. It has more recently led to

the transfer of scores of economists into the department and the occupation of key administration positions by E. S. Mason, W. L. Thorp, Clair Wilcox and other well-known economists.

There is perhaps little use in calling the roll of other agencies. It can be succinctly stated that the mobilization of the nation's resources for war presented an environment which gave broad scope for the specific knowledge and analytical traits which are induced in an economist's training, and provided also the opportunity for the development in many of high administrative faculties. In this respect, the way opened for economists in wartime service was, in degree, quite beyond that for persons brought up in any other academic discipline except, perhaps, for physical scientists in various fields of research, especially that of atomic research.

This is, let it be hastily added, not to be said in reverse. The fact is that the broadened economic functions of government, themselves in some considerable degree related to the consequences of war, promise a continuingly large place for economists in the public service, and this fact poses some of the most practical questions that will have to be considered with respect to the future training of economists.

Most young economists under thirty were drawn into the armed forces and not many over fifty went into government service except upon a part-time consultative basis. It was therefore the qualities of the relatively young economists which were put to the test by the war. In infinitely varied ways these proved to be on the whole qualities well adapted to the tasks assigned.

Wartime experience occurred, however, within a closed philosophical framework, so to speak. Aims and ends were given. Only means were sought. Wartime experience therefore provides no light upon the capacity of economists to provide, in the practical setting of public events, their capacity to bring guidance to the trend of peacetime economic activities of government. There are those who say that this is no function of the economist, as the carpenter is not expected to conceive a house. Strictly speaking, no doubt this position can be defended. But someone must conceive a house and, politically speaking, it is nobody's business to train the architect. Training in economics should provide a better apprenticeship than most, and if architects fail to develop from this school, it will be due to the absence of really large intellects in the field or defects in their training which stunt the imagination and the will to conceive. It is, nevertheless, not to be doubted that the training of economists provides a pool from which to meet the call for expanded technical personnel in peacetime activities of the government.

Wartime experience, it may properly be supposed, represented an

important stage in the evolution of the relation of economists to society. Looking to the future, it appears certain that they will occupy a much larger place in public affairs than heretofore, a new range of responsibilities which will, however, in no sense impair the critical and analytical functions which they have always performed in the free intellectual atmosphere of the universities.

V. *The Colleges and Universities*

From what has already been said about the great absorption of academic economists into the public service, the situation in the colleges and universities may be readily inferred. A very large proportion of the teachers were *in absentia*. At home, graduate students were practically non-existent and upper-division students also gradually disappeared in the draft. Normal teaching duties were thus reduced to a minimum. With most younger men gone, the remaining professors undertook elementary courses or were drawn into abnormal duties. On many campuses this consisted of providing special types of instruction to Army and Navy students, such as "area courses" for personnel assigned to military government courses or, together with teachers garnered from many departments, presenting courses in American history, elementary mathematics or other subjects for students in uniform.

A number of professors, mainly in graduate schools, were able to offset their partial leisure by part-time participation in public duties, while others stuck to their prior scholarly pursuits with a few notable results in publications and others to be anticipated.

All in all, however, the campus picture is largely one of a hiatus and even those who remained, as well as those who left, will have a task of intellectual rehabilitation for their particular types of research and instruction.

The fact that graduate students of economics practically disappeared from the universities for a period of five years presents a peculiar problem in the recruiting of teaching staff after the war. It would have been serious enough standing alone. But it is exaggerated by the fact that the government service provides a large continuing field of employment for young economists at levels of pay and with financial prospects far greater than that presented by academic pursuits. Consequently, many of them will never return, adding to the deficiency created by the generation which never materialized. This double deficiency exists in the face of the largest student population and the greatest need for younger staff which the universities have ever known.

COMMUNICATIONS

Prices in the Soviet War Economy

The rôle and behavior of prices in a socialist economy have long been discussed by economists and the literature of the past several decades includes the writings of von Mises, Hayek, Robbins, Barone, Lange, Taylor and others.[1] Actual study of this subject through observation of the economy of the U.S.S.R. has been difficult in recent years because of the extreme paucity of published price data. This article attempts to contribute to the factual base of this discussion by presenting the fragmentary material available on price behavior in the Soviet Union during the past war.

Two contradictory conclusions on this subject may be cited. One is the statement of a recent American writer that "the extent of the wartime price advance" in the U.S.S.R. has been "undeniably greater than in the United States and Great Britain."[2] On the other hand, a Soviet economist has written that the U.S.S.R. succeeded in stabilizing the great majority of prices during the war and actually reduced prices in many branches of industry, thus achieving a far greater degree of price stability than did the capitalist nations participating in the conflict.[3] Which of these views is correct? To answer that question we shall consider the information available on wartime prices in the U.S.S.R.

It will be helpful to distinguish and discuss separately two categories of prices. The first group may be defined as consisting of all prices other than those paid by individual final consumers, including, among others, prices of raw materials, of manufactured products at all stages of fabrication and distribution except final retail sale, and of the great bulk of foodstuffs. In the main these are prices paid by the government directly or by government-owned enterprises. The second category consists exclusively of prices paid by individuals purchasing commodities for their own consumption. It will be shown below that the behavior of those two groups of prices has differed quite sharply in the U.S.S.R. during the past war and that the different views quoted above arise largely because the two writers are centering their attention upon different categories.

[1] *Cf.* B. E. Lippincott, editor, *On the Economic Theory of Socialism* (Minneapolis, 1938), pp. 3–38, for a summary of this discussion.

[2] T. A. Sumberg, "The Soviet Union's War Budgets," *Amer. Econ. Rev.*, Vol. XXXVI, No. 1 (March, 1946), p. 116.

[3] L. Maizenberg, "O Tsenoobrazovanii v Sovetskoi Ekonomike" (On Price Formation in the Soviet Economy), *Planovoye Khozyaistvo*, No. 6 (Nov.–Dec., 1945), p. 67.

As is well known, a basic feature of the Soviet planned economy is state control of all prices in peace and war. Most prices are fixed directly by government agencies, while those which are left free to fluctuate under the impact of supply and demand forces are accorded this treatment because and only for so long as their freedom of movement is deemed to be in the state's interests. The conscious utilization of prices to assist the government in attaining its economic objectives has been the customary procedure in the U.S.S.R.[4]

During the past conflict the price mechanism in the Soviet Union was naturally employed to facilitate the war effort. Prices played an ancillary rôle in the process of converting the Soviet economy from peace to war since the nature of that economy made it possible to effect most of the required changes by direct administrative order. As will be seen below, price manipulation was used to furnish incentives for maximum output of essential commodities. In addition, Soviet price policy from 1941 to 1946 helped cope with the U.S.S.R.'s domestic inflation problem along lines quite different from those employed in other belligerent countries.

With respect to the first group of prices defined above, the Soviet government during the war followed a policy of maintaining stability of base prices, and in some cases it even lowered base prices during the latter part of the conflict. Increases in base prices were apparently very rare, being confined to those products which were not only vital to the war effort but were also produced under special cost conditions. In the Commissariat of Ferrous Metallurgy, for example, relatively high prices were set for those products requiring high manpower inputs per unit, in order to improve the relative profitability of these products and provide plant managers with the incentive to produce them even though manpower was extremely tight.[5]

But while keeping the great majority of base prices stable, the directors of the Soviet economy sought increased production by introducing a comprehensive system of premium and penalty payments which were added to or subtracted from the base prices for certain portions of each productive unit's output. Among the objectives specifically sought through this system of supplementary payments were production at or above the state plan and production of commodities having higher quality than minimum requirements. As will be seen from the specific examples given below, the efficacy of these premium payments to stimulate output resulted from their relative generosity as compared with base prices.

Illustrative of the manner in which the premium payment system worked is the case of spare parts for the production of which above plan the government authorized payment of double the base price, though all output up to the plan level continued to be paid for at the original base price.[6] The same pricing technique was applied in agriculture as is evidenced by the

[4] Alexander Baykov, *The Development of the Soviet Economic System* (Cambridge, 1946), pp. 367–68.

[5] Maizenberg, *op. cit.*, pp. 61–62.

[6] *Loc. cit.*

price schedule for sugar beets produced on certain collective farms. The following premiums were paid these farms (on a per hectare basis): for each quintal of beets delivered above eighty but below 100, 100 per cent of the basic delivery price; for each quintal from 100 to 120, 200 per cent of the basic delivery price; for each quintal above 120, 300 per cent of the basic price. Above plan deliveries of sugar beets were also rewarded by premium payments in the form of sugar sold at very low price. Thus for each quintal of sugar beets, up to ten, delivered above the per hectare plan, 600 grams of sugar were turned over to the collective farm, while for each quintal above ten in excess of plan, 800 grams of sugar were provided by the government.[7] From these representative examples, it is clear that productive enterprises could greatly increase their profits by even modest succeess in securing output in excess of the state plan.

Greater attention to quality of product was sought by the payment of premiums for output superior to basic requirements and by the deduction of penalties from base prices for output not meeting these requirements. In the case of aviation gasoline, for example, the critical characteristic was octane rating, while in the case of coal it was ash content.

It has been pointed out above that in general the Soviet government did not raise base prices for raw materials, manufactured products, food or other commodities which it, or productive enterprises, bought. It is important to note that during the course of the war important price reductions were ordered for significant groups of products. One Soviet writer reports that by the beginning of January, 1944, the government had saved about 35 billion rubles because of decreased prices.[8] The significance of this sum can be grasped from the fact that it equals over 10 per cent of total budgetary expenditures for defense in the years 1941–43 inclusive.[9] Since most of these reductions are credited to increased productivity in the metallurgical and armaments industries, it seems likely that the Soviet Union, like the United States, achieved substantial unit cost reductions as output of planes, tanks, and other weapons was put on a mass production basis during the war.[10]

It should not be inferred from the above, however, that it was stability or decrease of unit costs in most major industries during the war which made it possible for the U.S.S.R. to keep prices of manufactured products stable. Actually costs went up significantly in many major Russian industries

[7] A. Chuvikov, editor, *Spravochnik Predsedatelya Kolkhoza* (Handbook for Collective Farm Chairman), (Moscow, Selkhozgiz, 1944), pp. 40–41. While the particular premiums cited above applied only to certain groups of Soviet farms, the patterns they indicate were common as devices to stimulate farm output.

[8] Akademiya Nauk Soyuza SSR, *Referaty Nauchno-Issledovatelskikh Rabot za 1944 g. Otdeleniye Ekonomike i Prava* (Reports on Scientific Investigations in 1944, Section of Economics and Law), (Moscow, 1945), p. 15.

[9] Sumberg, *Amer. Econ. Rev.*, Vol. XXXVI, No. 1, p. 115.

[10] *Cf.* A. G. Zverev, *O Gosudarstvennom Byudzhete SSSR na 1945 god i Ispolnennii Gosudarstvennogo Byudzheta SSSR za 1943 god* (Concerning the State Budget of the U.S.S.R. for 1945 and the Execution of the State Budget of the U.S.S.R. for 1943), (Moscow, 1945), p. 8 for data on wartime increases in productivity.

during the war, the natural result of the economic dislocations brought on by the conflict. The industries producing iron and steel, coal, oil, and power apparently witnessed significant cost increases.[11] In these industries, obviously, maintenance of the old pre-war price quotations was achieved only at the expense of any profits that may have formerly been obtained. The reduction of production costs in these industries has apparently been made a primary post-war objective, with the government taking stern measures to insure strict accounting and adherence to the state financial plan. The result of these measures is apparent in the report that in the second quarter of 1946 planned production-cost declines were achieved by the iron and steel industry of the U.S.S.R. and by the coal industry of the western regions.[12]

If we conclude, as seems justified by the material reviewed above, that Soviet prices in the first category remained rather stable during the war, the claim advanced by the Soviet writer cited above can be understood. In comparison we may note that the Bureau of Labor Statistics index of wholesale prices advanced about a third from 1940 to 1945. Premium payment schemes were employed to some extent in this country, as in the case of non-ferrous metals, and subsidy payments were paid to producers of other commodities, particularly farm products, but it seems likely that the United States experienced a much sharper rise of general wholesale prices than did the U.S.S.R. To what extent the greater stability of basic Soviet prices was offset by the much wider use of premium payments, it is impossible to judge because of the lack of necessary data.

Turning to prices paid by consumers at the retail level, however, a different and more complex picture is to be found. The most general statement that can be made on the basis of the scanty available data is that from 1940 to 1945 the level of Soviet retail prices increased by very much more than one-fourth, although by the latter year they had fallen far below their wartime peak.[13] This general statement, however, conceals a complex situation which requires detailed exposition.

Within a month after the German invasion of the U.S.S.R., rationing of urban food and consumers goods was instituted throughout the Soviet Union.[14] A differential rationing system was set up to distribute food, the

[11] Data on cost increases for particular commodities are rare but one report indicates that between 1941 and 1944 raw material production costs for the People's Commissariat of Construction rose as follows: brick 31.3 per cent, sand 8.0 per cent, crushed stone 20.5 per cent, quarry stone 44.7 per cent, cement 6.5 per cent, and lumber 26.3 per cent. *Cf.* V. Grossman in *Planovoye Khozyaistvo,* No. 3 (1946) p. 42.

[12] *Moscow Daily News,* July 31, 1946.

[13] This conclusion may be reached in the following fashion. From data in the Fourth Five-Year Plan, it may be inferred that the value of all retail trade in 1940, expressed in prospective 1950 U.S.S.R. prices, is about 215 billion rubles. The actual volume of retail in 1940, however, was 174.5 billion rubles, according to a report delivered by the Chairman of the State Planning Commission on February 18, 1941. Comparing these two valuations of the same physical volume of trade in different sets of retail prices, it may be seen that the planned 1950 level is some 23 per cent above the actual 1940 level. It is stated in the Fourth Five-Year Plan that the 1950 prices will represent a lowering of prices prevailing in 1945.

[14] M. Dobb, *Soviet Planning and Labor in Peace and War* (New York, no date), p. 63.

amounts assigned different individuals depending upon the kind of work they did. The largest rations went to workers in armaments and heavy industries while the lowest rations went to housewives and children. Relative to the energy output required of the Soviet urban population, the rations were not overly generous and they were reduced several times during the war. The food situation was made still worse by the fact that not infrequently the full amounts of rations were not issued so that meat, fats and oils, and sugar were often completely missing from many persons' diets.[15] The available evidence suggests that during most of the war almost all consumers' goods were as scarce as or scarcer than many foods and these rations too were frequently unfulfilled. One American correspondent estimated in early 1943 that fewer than ten out of a thousand civilians had been able to purchase a new item of clothing during the preceding year.[16] For our purpose, however, the most important fact is that all commodities received through the ration system were paid for at low pre-war prices. This fact has been cited by some Soviet economists as proof that the stability of the ruble was maintained during the war and real wages did not sink inordinately.[17]

The diminution of food and civilian goods available for civilians resulted both from the loss of important productive areas, such as the Ukraine, to the Germans in the early years of the war, and from the diversion of almost all remaining production of many commodities to the immediate needs of the greatly expanded Soviet armed forces. At the same time that these forces reduced most sharply the quantities of goods available for sale, civilians in the U.S.S.R. found themselves in possession of increased money incomes. Hours of work were lengthened with accompanying payment of higher overtime wages; bonus piece-work wage systems were frequently adopted and provided very high premium payments for above plan output; special subsidies were issued to workers moving from their homes eastward with evacuated factories; these and other factors increased the disposable income in the hands of city people. The result was what a Soviet economist has referred to as the "temporary lack of correspondence . . . between the monetary incomes of the population and the volume of goods available through the state and cooperative trading establishments . . . ."[18]

Although efforts were made to reduce the "inflationary gap" in the Soviet economy by imposition of a special wartime income tax and by launching intensive campaigns to secure government bond purchases, the excessive money incomes of the population were soon reflected in the few markets where goods could be purchased outside the ration system.[19] The

[15] Walter Graebner, *op. cit.*, p. 165.

[16] *Ibid.*, p. 162.

[17] Akademiya Nauk Soyuza SSR, *op. cit.*, p. 10.

[18] Maizenberg, *op. cit.*, p. 66.

[19] This discussion omits those sources of non-rationed goods which are not relevant to a study of the price system, such as the mass victory garden movement which contributed millions of tons of potatoes and vegetables to urbanites' diets, and also barter, particularly of second-hand consumers goods for food, which was practiced extensively in the early years of the war.

chief of these until 1944 was the so-called free markets, or bazaars, where trading took place between individuals. A second, less important, source of goods was the state commission stores which sold second-hand goods for individuals and charged a 10 per cent commission for this service.

The free markets are sometimes termed "black markets" in correspondents' accounts but they are actually entirely legal institutions to which collective farmers may bring their produce, or rather that portion of their produce remaining after they have fulfilled their delivery obligations to the state, and sell for whatever price the market permits. The effect of inflationary pressure on these markets has been summarized by a Soviet economist who wrote, "Collective farm markets did not increase their role in supplying the population with products but to a significantly greater extent absorbed the monetary means of the urban population."[20] Although the Soviet authorities regularly collect data on prices in these markets,[21] these have never been published, so that we must turn to the fragmentary accounts published by correspondents who have priced the Moscow market at different times. Table I summarizes price movements to 1944.

TABLE I.—RATION AND FREE-MARKET PRICES FOR CERTAIN FOODS IN MOSCOW, 1941–44

(In rubles per kilogram)

Food	Ration Prices	Free-Market Prices		
		Late 1942	Late 1943	May, 1944
Bread	1[a]	100	130	80[a] 90[b]
Meat	12	500	(*)	450[c] 600[d]
Sugar	5	1,000	1,100	800
Butter	28	(*)	1,100	1,100
Grain	2–6	(*)	110[e]	(*)
Eggs (each)	0.65	15	20	27

* Not available. [a] Black bread. [b] White bread.
[c] Beef. [d] Pork. [e] Flour.

Sources of data: Ration prices and free-market prices for late 1942 are taken from H. C. Cassidy, *Moscow Dateline* (Boston, 1943), p. 320, except for egg prices. The ration price for eggs and all of the late 1943 quotations are from Edgar Snow, *People on Our Side* (New York, 1945), p. 167. The late 1942 free-market egg price is from Graebner, *Round Trip to Russia*, (Philadelphia, 1943), p. 167. Free prices in May, 1944 are from Harrison Salisbury, *Russia on the Way* (New York, 1946), p. 75. All prices apply to Moscow markets, the trends in which are believed to have been representative of the country as a whole. Prices have been rounded in converting from dollars to rubles.

[20] Akademiya Nauk Soyuza SSR, *op. cit.*

[21] Soviet enumerators in a representative sample of cities regularly collect data on prices and volume of goods in collective farm markets. *Cf.* Tsentralnoye Statisticheskoye Upravleniye Gosplana SSSR, *Slovar Spravochnik po Sotsialno-Ekonomicheskoi Statistike* (Dictionary-Handbook of Social-Economic Statistics), (Moscow, 1944), p. 180.

It is evident that by late 1942 most of the impact of Soviet inflation had already been felt in the free markets. This resulted from the complete mobilization of all resources for war which took place immediately after the German invasion. Consequently, the price changes between 1942 and 1944 were relatively minor as compared with those between the pre-war period, as represented by the ration quotations, and late 1942. The sharpness of the free-market price rises during the first year and a half after the U.S.S.R. entered the war was certainly many times greater than the increase in legal food prices in either the United States or Great Britain. The height of the Soviet price increase seems unlikely to have been matched even if comparisons were made between pre-war food prices in the United States and Great Britain and black market prices prevailing during the war.

Undoubtedly the high free-market quotations restricted access to its unrationed food to a relatively small number of highly paid persons such as high officials, successful writers and artists, etc. The average Moscow worker, earning usually well under 1,000 rubles monthly[22] could buy little in this market, and that little infrequently.

Several motives were probably behind Soviet toleration of the free collective farm market. First, since the prices farmers received for the great bulk of their produce sold to the government were even lower than the ration prices in Table I, the opportunity to sell even a small amount of food on the free market permitted many farmers to augment their incomes considerably. No doubt this served to mollify peasants who might otherwise have been more reluctant to deliver the great bulk of their output to the state at pre-war prices. As a result of the very high prices obtainable on the free markets some farmers became relatively quite wealthy. Around Christmas, 1942 a government drive to acquire excess currency in the hands of farmers for the war effort produced four billion rubles within a short time after farmers were asked to contribute funds for armaments. Individual farmers sometimes gave as much as 250,000 rubles.[23] In a very real sense, the consumer who patronized the free market may be said to have subsidized the government's farm price stabilization program which made it possible for the state to maintain the low ration prices cited above.

Another salutary effect of the free market in food, from the Soviet government's point of view, was the fact that its existence helped maintain some purchasing outlet for the ruble and therefore served as an incentive for city workers to earn as much as they could by maximum output. If there had been nothing to buy for one's income—aside from the insufficient quantities of rationed goods which required only a small expenditure of rubles—the effectiveness of premium prices and piece-rate wages as output stimuli would certainly have been reduced, if not entirely eliminated. Under the extreme conditions of scarcity which prevailed in the U.S.S.R. during 1941–44, the marginal satisfaction accruing from even very occasional access to the free market was undoubtedly very high and its availability was a factor in the maintenance of worker morale. Simultaneously this

[22] Salisbury, *op. cit.*, p. 77.

[23] Cassidy, *op. cit.*, pp. 321–22 and *Pravda*, December 9, 1942.

market served as a drain upon the inflated volume of urban civilian income.

Representative price data for consumers goods (usually second-hand) sold in the free market are not available, but the general information at hand indicates that these soared too. Many sales of such goods took place in or near the farmers' markets, but the government sought to organize this trade somewhat by setting up a network of commission stores. Buyers could purchase used clothing, utensils, and other non-food items here without ration coupons; the price minus the government's ten per cent commission went to individuals who had owned these goods previously. In May, 1944 typical prices in these Moscow stores were as follows: 1,200 rubles for a pair of men's shoes, 3,600 to 4,200 rubles for a pair of good quality women's shoes, and 350 rubles for an aluminum pot.[24] Like food prices in the farmers' market, these quotations placed such second-hand goods far beyond the reach of most urbanites.

In the spring of 1944, the supply of food and consumers goods at the disposal of the government began to increase, reflecting in part the improved military situation. To put this increased supply of goods at the disposal of the public, chains of commercial stores and restaurants were opened throughout the U.S.S.R. Ration cards were unnecessary in either type of establishment, but the prices charged in them approximated the free collective farm market and commission store levels. From the very first these stores offered substantial discounts to various groups of Soviet citizens, particularly Army officers and winners of decorations for outstanding military or civilian service. Although they received no discounts as a group, collective farmers were among the chief patrons of these establishments, using the money received from their sales on the free market to purchase rare foods and new consumers goods.[25]

Soon after their opening, the commercial stores began to reduce their prices on food, instituting substantial reductions several times during both 1944 and 1945 and also in March, 1946. As in the case of free-market prices, the Soviet government has not published data on quotations in commercial stores so that study of the latter prices requires the use of data collected by American correspondents in Moscow. The data shown in Table II illustrate the substantial decline which took place from 1944 to 1946. These drastic reductions in commercial store food prices were followed by similar declines in the competitive farmers' markets, where, according to a Soviet statement, prices in the middle of 1945 were only 40 per cent of their peak 1943 quotations.[26] The data in Table II are not strictly comparable to those in Table I since the food sold in the commercial stores was of better quality, cleaner, and more attractively packaged than the corresponding food sold in the collective farm markets; also purchasers in the government stores were sure of receiving true weight.

Reductions in the prices of unrationed consumer goods sold in government stores were fewer and slower in appearance than declines in the prices of unrationed foods. The most drastic price reductions in this field did not

[24] Salisbury, *op. cit.*, pp. 76–77.

[25] *Washington Post*, August 20, 1944 and *New York Times*, April 6, 1944.

[26] Maizenberg, *op. cit.*, p. 67.

TABLE II.—REPRESENTATIVE MOSCOW COMMERCIAL STORE FOOD PRICES, 1944–46
(In rubles per kilogram)

	Aug. 1944	July 1945	Sept. 1945	March 1946
Bread	275[a]	45	30	(*)
Sugar	650	500	300	(*)
Butter	800	525	370	(*)
Meat	320[b]	250	200	110–120

* Not available but known to be substantially lower than the September, 1945, price.
[a] White bread.
[b] Beef.

Sources of data: Prices in August, 1944 are from the *Washington Post*, August 20, 1944, Both sets of 1945 quotations are from Salisbury, *op. cit.*, p. 76. The March, 1946 price of meat is from the *Christian Science Monitor*, February 26, 1946. Prices have been rounded in converting from dollars to rubles.

take place until a year after the war's end in July, 1946. Some of the reduced prices instituted then, and the percentage reductions from the old levels which they presented are shown in Table III. Although these reduc-

TABLE III.—REDUCTIONS IN PRICES OF UNRATIONED CONSUMER GOODS, 1946
(In rubles)

Commodity	Price	Per cent Drop from Former Price
Pair men's leather shoes	810–1,600	42
Pair women's leather shoes	810–3,030	42
Pair cotton stockings	30	45
Pair silk stockings	120	45
Suit	1,600–4,000	43
Dress	1,500–2,200	43
Toilet soap	15–60	46
Knitted sweater	240–1,000	30

Source: *New York Times*, July 3, 1946.

tions undoubtedly made unrationed consumer goods available to a greater number of persons than formerly, it should be noted that the effect of these declines was largely nullified for an important group of purchasers at the commercial stores. At the same time that these reductions were promulgated, the discounts formerly given to various categories of persons—people who had won particular awards, army officers, employees of certain government institutions, etc.—were abolished.[27] The overall effect of these changes, therefore, was primarily to equalize roughly the purchasing ability of these formerly privileged persons with that of individuals who had for-

[27] *Pravda* and *Izvestiya*, July 2, 1946.

merly had to pay the full prices. Farmers, particularly, benefited from these reductions and the cuts may perhaps, in part, have been inspired by a desire to allay discontent arising among farmers as the result of price declines in the free bazaar markets where they sold their surplus foodstuffs.

From their inception, the commercial stores and restaurants—and the dual price system which their existence required—have been regarded as temporary expedients to help Soviet authorities force down free-market prices and to pave the way for the end of rationing, as well as for the restoration of free trade at one set of prices.[28] To reach this objective, the U.S.S.R.'s government is following the same technique as was employed to end rationing in the early 1930's. Then commercial stores were also introduced to sell unrationed goods at very high prices, while later successive price reductions brought the cost of these unrationed goods far nearer to the very low ration prices. Then the low ration prices were raised and rationing was finally replaced by free trade at a single price level intermediate between the original high commercial store quotations and the very low initial ration prices. To ease the impact of these price increases wages of persons in the lower-wage categories were increased somewhat.[29]

The early indications in the last years of the war that the pattern of the early 1930's would be repeated have recently been completely confirmed. After the series of commercial store price cuts described above, the clinching step in this transition process was taken the middle of last September. At that time it was announced that the average price of rationed foods had been tripled, the price of black bread rising from 1 to 3.4 rubles per kilogram, of sugar from 5 or 6 rules to 60 or 70 rubles per kilogram, of meat from 14 to 34 rubles per kilogram, and of butter from 24 or 28 rubles to 60 rubles per kilogram. At the same time, the high prices for these same foods in the commerical stores were cut once again, from 25 to 50 per cent or more in the case of different items. Finally to ease the transition for low paid workers, those earning less than 900 rubles a month received compensatory wage increases. These ranged from 110 rubles a month for persons earning 300 rubles or less to 80 rubles for those earning 800 to 900 rubles.[30]

While this latest move has substantially narrowed the gap between the prices of rationed and unrationed goods, there will have to be further alterations of these quotations before the two levels are coincident. Presumably this will take place during the remainder of 1946 and in 1947 until the time rationing is abolished. Quite clearly, the resultant uniform price level will be substantially higher than that which prevailed before the war. It is the result of the inflationary pressure to which the Soviet economy was subjected by the war-inspired scarcity of food and consumer goods. In these fields, certainly, the statement by Mr. Sumberg quoted at the beginning of this article was entirely correct. Soviet economists who have

[28] Maizenberg, *op. cit.*, p. 65.

[29] L. E. Hubbard, *Soviet Trade and Distribution* (London, 1938), p. 55.

[30] The data above are taken from Moscow dispatches of the Associated Press and the International News Service, dated September 16, 1946, the day the new regulations went into effect, and the *New York Times*, September 20, 1946.

concentrated their attention on the formal stability of prices quoted for manufactured products and raw materials, other than those sold to consumers, have thereby sought to minimize the tremendous declines in Soviet real wages and incomes during the war. The latest government price and wage actions simply represent a realistic effort to take account of this decline in real remuneration as a preliminary to abolishing the current unwieldy dual price Soviet distribution system.

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A Suggestion for Post-War Taxes

I

The character of the federal tax problem is fairly well understood. In the specific post-war tax proposals which have come to the writer's attention, there is a high degree of agreement, implicit if not expressed, with the following principles:

1. Federal taxes should be reduced from wartime levels, but should be high enough to meet all post-war government expenditures.
2. Taxes on corporations and the income derived from them should be drastically revised: (a) so that each shareholder is taxed once but only once on the earnings belonging to his shares; (b) so that income derived from business corporations is taxed the same as income derived from other types of business or from other sources; and (c) so that distribution of earnings to shareholders is encouraged rather than inhibited but making it possible for corporation managements to retain a reasonable proportion of earnings when funds are needed for capital expansion.
3. Since the taxes supporting social security benefits are no longer closely related to those benefits, those taxes should be combined with the regular tax system, with extension of social security benefits if this change in taxation results in inequitable burdens on some classes in the population.
4. Taxes on capital gains ought to exempt income previously taxed which has never been distributed to the owner, but to tax like other income those gains which represent income not previously taxed.
5. Taxes on estates, gifts, and income derived from trusts need revision, better integration with each other, and better integration with the individual income tax.
6. Most of the numerous excise or sales taxes should be abolished.
7. Some method is needed of averaging personal income taxes over a period of years, in order that persons with highly irregular incomes from year to year, or receiving in certain years income representing the results of work done over a period of years, will not be taxed unfairly.
8. The probable level of federal government expenditures, even with the utmost economy, is such that the cost cannot possibly be met by progressive taxes on incomes larger than pre-war exemption limits, and some method

of taxing incomes all the way down the income scale is required. In view of the extensive social security benefits which accrue largely to the lower income classes, such taxation is not inequitable. Inequitable burdens in individual cases, such as taxpayers with large families, can best be handled by the character of social security benefits.

9. The process of collection of taxes, and the record-keeping involved in their collection, should be simplified, and withholding taxes should be utilized so far as practicable.

Regarding means of accomplishing these aims, no such agreement appears. Proposals put forward are in some cases recognized to be only partially in conformity with the objectives stated, and in other cases are actually in conflict with the specified objectives. Some of the tax problems, notably those relating to corporation income taxes, capital gains taxes, and an averaging device for personal income taxes, have been declared to be impossible of solution in a satisfactory manner. This view is not shared by the present writer, and the following suggestions are offered in the belief that they constitute a post-war tax program in conformity with all of the principles stated above. For convenience in presentation, the suggestions are given in the following order: corporation income taxes, an income-at-source tax at a flat rate; an averaging device for individual income taxes; treatment of capital gains; and treatment of inheritances, gifts, and income received by trusts.

II

The following proposal for federal taxes on corporation income is described as though all shareholders in corporations were individuals. However, its provisions are applicable also to shareholders which are themselves corporations or nonprofit associations.

(a) A 10 per cent tax on corporation net income as a part of the income-at-source tax at this rate which is described in the next section of this article.

(b) A tax, at the highest rate applicable to any individual income, on any portion of the net income of a corporation, after payment of the income-at-source tax, which is not allocated to its respective shareholders.

(c) A required report by every corporation to each stockholder of record on the last day of the corporation's fiscal year, not more than three months thereafter, stating the amount of earnings which has been allocated to his shares, the amount of this sum which has been paid to the federal government as a withholding tax described in the next item, the amount which has been paid in dividends, and the amount which has been retained by the corporation.

(d) A withholding tax to be paid by the corporation at a fixed percentage of allocated earnings, perhaps 25 per cent, the amount of which may be used as a tax credit, or receipt for income tax paid, by the shareholder when filing his personal income tax return. Individuals who find that this tax credit, plus any other withholding taxes to which they are subject, exceeds their tax liability will be entitled to a refund.

(e) Each individual to be required to include in his personal income tax return the entire amount of the earnings of the corporation allocated to his shares, in the year in which he receives the notification, on the same basis as other forms of income.

The purpose of the second (b) and third (c) items in this proposal is to solve the problem of uncertainty regarding ownership of undistributed profits, which is one of the leading objections to treating corporations like partnerships for tax purposes. Because of the complicated character of some corporations, and their various classes of stock, action by the governing body of the corporation is sometimes necessary to determine the earnings belonging to each shareholder. Even when the corporation has only one class of stock, the shareholder may not know the total number of shares outstanding nor the earnings of the company, and therefore may not be aware of the earnings which properly belong to him and which have been reinvested for him by the officers of the company.

The other leading objection to treatment of corporations like partnerships for tax purposes is the hardship incurred by shareholders in companies which retain all, or a large proportion, of their earnings. Stockholders in such corporations might be required to use income from other sources to pay taxes on the earnings which the corporation has retained. Owners of unincorporated business concerns and members of a partnership are, it is true, faced with a similar problem, but with the real difference that these owners have the power as individuals, which the shareholder does not, to dispose of the assets representing the reinvested earnings or to withdraw their portion of the partnership profits. The fourth item above (d) is designed to eliminate this objection by reducing it to negligible proportions.

The withholding tax in effect requires the corporation to distribute a portion of its earnings—unless the corporation fails to allocate its earnings and becomes subject to the unallocated profits tax—since the recipient may receive a refund from the government if the amount withheld exceeds his personal tax liability. At a 25 per cent rate for the withholding tax, only a very few wealthy stockholders in companies retaining most or all of their earnings would receive dividends smaller than their tax liability arising from those stockholdings.

The proposal made here also meets other objections which have been raised to taxing corporations like partnerships. This proposal does not, as was claimed in the case of the taxation of stock dividends, tax the redivision into a different number of shares of property already owned by the shareholder. It taxes annual earnings or income. In the case of corporations paying out dividends larger than current earnings, and thus in effect distributing capital as measured by the assets of the corporation at the beginning of the income period, only current earnings would be taxed. Losses incurred by companies in which the taxpayer has invested are automatically taken into his tax return and offset against other income. Errors in calculating earnings of a corporation in a particular year, due to difficulties of correctly estimating depreciation and other costs, are reflected in the taxes of individuals in that year, but this is not a serious problem in view of the

averaging device which is described below. Double taxation of undistributed earnings in the case of stock which is sold—once when earned and again as capital gains—is avoided by the method of treatment of capital gains which is proposed. Complications arising from layers of holding companies are avoided, since each company includes in its own earnings those allocated to any shares in another corporation which it owns, and uses as a tax receipt the report of withholding taxes paid by that corporation on the earnings of those shares.

III

The basic principle of the income-at-source tax which is proposed here is a recognition of two facts: (1) that all the people in the nation benefit from governmental services and should carry some part of the cost of government; and (2) that direct collection of taxes from all persons is too intricate and costly a task to be attempted. An income-at-source tax is far preferable to a sales tax, which is frequently recommended on the same grounds, because it is more equitable, is less susceptible to pyramiding, and is less expensive to collect.

An income-at-source tax, with none of the usual exemptions, would be the simplest type of income tax to collect. Business enterprises and other employers could pay monthly the tax imposed on wages, salaries, commissions, royalties, and interest, with record-keeping far simpler than is now required for social security taxes, since the payment could be computed on the total payroll plus the aggregate amount of royalties, interest, and commissions paid to individuals but not included in the payroll. The additional records required to segregate royalties, interest, and commissions paid to individuals from those paid to other business enterprises or non-profit associations would be relatively slight. Record-keeping for the withholding tax on wages and salaries would be greatly reduced, since separate withholdings would not be necessary for persons subject under present law only to the normal tax, and since the income exempt from surtax could be raised.

In the case of domestic servants and other persons employed by individuals, the income-at-source tax could be payable with the latter's personal income tax. A question could be placed on the individual income tax form regarding the amount of salaries or wages paid to servants or other employees, with the tax thereon added to the employer's personal income tax. For administrative reasons, it may be desirable to place such a question only on forms used by persons subject to surtax or operating their own enterprises. This would in effect grant an exemption in the case of servants hired by persons with income less than the minimum subject to surtax, but the amount of income escaping taxation through this exemption would be relatively small.

The income-at-source tax on the net income of corporations, farmers, and other business enterprises filing statements of gross income and expenses of operation, would be payable annually at the time of filing those statements or shortly thereafter, as with present corporation income taxes

and personal income taxes on farmers. If partial payment of this tax is desired more promptly, in conformity with the principle of pay-as-you-go taxes, the procedure would not be more difficult or complicated than under existing law regarding declaration of estimated tax by individuals.

An income-at-source tax of 10 per cent would not exceed the present federal taxes on the great majority of wage-earners, and could readily be introduced in such a way as to avoid any decrease in the "take-home" pay of wage-earners subject to social security taxes. Employer and employee social security taxes are now 7 per cent on wages under $3,000, and the normal income tax is 3 per cent with a $500 exemption for the taxpayer and each dependent. Wages in excess of $3,000 are not subject to social security taxes, but are subject to a surtax of 17 per cent in addition to the normal income tax, except for persons with more than five dependents. For persons with less than five dependents a portion of wages under $3,000 is also subject to the surtax.

In only a relatively small number of cases would a 10 per cent income-at-source tax exceed present social security and normal income taxes by more than a few dollars, and for a large proportion of wage-earners such an increase would be more than offset by a moderate increase in the surtax exemption. Moreover, the reduction in the cost of business bookkeeping would be substantial, enabling business enterprises to absorb without significant additional cost the income-at-source tax in excess of present social security and withholding taxes. The law enacting the income-at-source tax could readily be phrased in such a way as to prevent any reduction in "take home" pay of employees subject to both social security and income withholding taxes. Only in the case of wage-earners who have unusually large differences between gross income and net income and who are now entitled to a refund of part of the tax withheld from their wages, and in the case of persons with relatively small incomes derived from occupations not covered by social security taxes, would the proposed income-at-source tax significantly exceed their present tax.

Since the major portion of the proposed income-at-source tax would replace social security taxes levied to meet the cost of benefits not now provided to the entire population, a problem arises of the equity of the tax relative to the distribution of social security benefits. The original social security system made a substantial effort to relate the benefits accruing to various individuals directly to the payments made by them or by their employers on their behalf. However, the numerous changes which have been made in the character of the benefits and the types of public assistance which have been developed have greatly reduced the relationship between the payments made by each individual and the benefits to which he is entitled. The only way by which social security benefits and burdens can be fairly related to each other is to extend both to the entire population. Some difficult problems are involved in a general extension of social security benefits, but those difficulties will be lessened rather than intensified by distributing the cost evenly on all incomes.

IV

Equity in taxation requires some type of averging device. With a progressive income tax a person with an unusually high income in one year pays more taxes than another person with the same income regularly spaced over several years. This problem is important in connection with taxes on owners of small and moderate-sized business enterprises, because of the likelihood that their income will be irregular; and especially important in the case of new ventures where good profits are anticipated at the start or for a short period after initial costs have been met but which may be subject to severe competition within a few years. The desirability of averaging business gains and losses over a period of years is recognized in the present law, where this is partially permitted.

The chief practical problems encountered in developing an averaging device for general application are to avoid producing a situation under which individuals would be paying taxes in years of small incomes on larger incomes received in previous years and to avoid undue complications in calculating the amount of tax. In view of the records which taxpayers have had to keep in recent years, and the present records maintained by the Bureau of Internal Revenue, the latter is less difficult than it would have been a few years ago.

The proposal made here is that a space be provided on the form used by persons subject to the surtax (with the 10 per cent income-at-source treated as the normal tax) for the amount of taxable income received in each of the preceding ten years, and for the average during those years. The taxable income for the current year is then divided into two parts:

(1) An amount equal to the average for the preceding ten years, or the entire taxable income if less than that average, which will be taxed according to the surtax scale; and

(2) The amount in excess of the average for the preceding ten years which will be taxed according to the surtax scale applicable to an income equal to one-tenth of that excess plus the average for the preceding year.

Under this proposal the total tax each year will be the same as though this income had been received evenly during the preceding ten years, and taxed in each of those years according to the current year's surtax scale.[1]

[1] The operation of this proposal may be illustrated by the following examples: (a) the case of a person whose regular income in a given year is 25 per cent larger than his average income for the preceding ten years; and (b) the case of a person whose regular income is the same as in the preceding ten years, but who receives a substantial inheritance (or has a capital gain):

	a	*b*
1. Income subject to surtax—report year (for *b*, $8,000 regular income plus $300,000 inheritance or capital gain)	$10,000	$308,000
2. Average income subject to surtax—previous 10 years	8,000	8,000
3. Excess of current years' surtax income over 10-year average (line 1 minus line 2)	2,000	300,000
4. One-tenth of amount in line 3	200	30,000
5. Total of amounts in line 2 and line 4	8,200	38,000

V

The justification of a capital gains tax rests on the fact that such gains are in part genuine income to the recipient. The objection frequently made to taxation of capital gains on the ground that they are not income is not valid, with the possible exception of gains directly associated with a change in the general price level. Capital gains are as significant to the recipients as any other form of income. Occupancy of a strategic trading position in the security markets, or in other markets, and diversion into individual income in the form of capital gains of changes in the value of capital assets is essentially the same type of economic activity as occupancy of titles to natural resources and the diversion into individual incomes, in the form of rents and royalties, of changes in value resulting from the use or development of such resources. In fact, a strategic position in the security markets and diversion into individual incomes of changes in the value of corporation shares of stock has become one of the chief sources of large incomes.

Nevertheless, two problems in connection with equitable taxation of capital gains have never been adequately solved: (1) avoidance of double taxation of the difference between the buying and selling prices of shares of corporation stock when that difference represents earnings which were currently taxed while the seller owned the stock—a problem which would be greater under the corporation income tax proposed above than under existing law; and (2) avoidance of unduly heavy taxes because of the irregularity of capital gains. With the method of averaging individual income over a period of years recommended above, the latter problem can be met by the inclusion of capital gains in an individual's income tax return on the same basis as other income, provided the gains are first adjusted for retained corporation earnings on which taxes have already been paid.

Reporting capital gains accurately is a complicated problem in any case, because expenses incurred in developing the property, commissions on purchase or sale or both, and other expenses connected with holding it should be taken into account. The additional complication introduced by including in these adjustments corporation earnings on which taxes have been paid is well worth while because of the greater equity of taxation which would result. For this adjustment, however, certain centralized records are

Computation of Surtax
(Schedule in Revenue Act of 1945)

	a	b		
7. On portion equal to average for previous 10 years (*i.e.*, on amount in line 2)			1,720	1,720
8. On portion in excess of average for previous 10 years:				
9. Scheduled surtax on income equal to amount in line 5	$1,782	$17,220		
10. Excess of amount in line 9 over amount in line 7	62	15,500		
11. Ten times amount in line 10—this is the surtax on the income in excess of 10-year average shown in line 3			620	155,000
12. Total surtax (prior to 5 per cent reduction)—sum of amounts in lines 7 and 11			$ 2,340	$156,720

desirable in order that the adjustment can be made readily and with reasonable accuracy.

Since under the corporation income tax proposed above each shareholder will be given information regarding the earnings allocated to his shares, the adjustment for these earnings, when a stockholder sells part or all of those shares, can in theory be made by totaling the amounts for each share from the date of acquisition (or date on which this type of taxation of corporation income went into effect) to date of sale. In practice, this is not likely to work well, because of the difficulty of keeping for long periods of time the annual earnings' statements received from the company. A more effective procedure would be the maintenance by the Bureau of Internal Revenue of a central register of corporation stock issues and earnings, against which any income tax return showing profit or loss on sale of corporation stock can be checked. To this register every corporation would be required to send an annual report giving for each class of stock the information which it has given to its respective shareholders. For listed stocks this information should be published each year and available at all times to any interested person. Whether this should also be done in the case of closely held corporations the stock of which is rarely sold will depend on public policy with respect to disclosure of earnings' data for such corporations.

With a central register of corporation earnings and their allocation, the additional instructions for making this adjustment in the capital gains section of the income tax form would not be difficult. The adjusted gain or loss could then be carried directly to the face of the report as one of the items in current income.

VI

Justification for an estate tax is based in part upon the possibility that an estate may have been built up by methods under which the owner did not meet his fair share of taxes during his lifetime, and in part upon the ground that transmission of great fortunes by inheritance should be discouraged by a democratic society which emphasizes individual opportunity and enterprise. Neither of these purposes is well met by the present tax on estates graduated according to the size of the estate.

To meet the first of these two primary purposes of the estate tax, it is preferable to close loopholes in other tax laws and to improve their collection, so that all types of income are taxed equitably as they are received. Retention of corporation earnings through a niggardly dividend policy, especially in the case of corporations controlled by wealthy people, has in the past been the most important device for building up and increasing large fortunes by tax avoidance. This method of tax avoidance should be eliminated by the corporation income tax proposed above.

The second principal purpose of the estate tax, to discourage the development of a small, extremely wealthy class through inheritance and to give widespread encouragement to individuals to exercise their talents for business enterprise and ingenuity, can be achieved much better through an inheritance tax than by an estate tax. That is, the tax should be taken off the estate left by a decedent, and placed on the heir or other recipient, with

the tax graduated according to the amount received rather than according to the size of the estate. Further, if the primary purpose of this tax is to foster a more equitable distribution of wealth and income, and more equitable distribution among the members of each generation of the opportunity to participate in business enterprise, the tax on an inheritance should not depend solely upon the amount inherited but also upon the other income of the recipient. The simplest method of accomplishing this purpose—with an income tax which is based on the averaging of income over a period of years—is to include an inheritance as an item in personal income in the year in which it is received.

Since the gift tax is designed chiefly to prevent evasion of estate taxes, gifts received should also, with perhaps a minimum exemption of a few hundred dollars, be included as an item in current individual income.

Investment in tax-exempt securities issued by government and use of trust funds are probably the next most important methods by which fortunes are built up by tax avoidance. It has long been recognized that the former can be eliminated only by cessation of issue of tax-exempt securities. Equitable taxation of the income from property held or managed by trusts has long been recognized as an exceedingly difficult problem because of the great variety in the types of trusts which have been established. It is proposed here that trusts be treated in a manner similar to that proposed above for corporations, with the beneficiaries in the place of shareholders. This method, it is believed, will achieve a reasonable degree of equity and will minimize administrative difficulties.

VII

In summary, the proposal for post-war federal taxation which is made here is to consolidate into two taxes the present corporation income tax, individual income tax, income tax on property held in trust, capital gains tax, estate tax, gift tax, and all social security taxes. The proposed taxes are:

(a) A normal income tax of 10 per cent collected at source on all payments that constitute income to the recipient, with no deductions or exemptions except in the case of wages paid to personal employees by persons with incomes under the minimum income subject to surtax; and

(b) An individual income surtax at progressive rates with income defined to include corporation earnings allocated to the respective shareholders, trust income allocated to beneficiaries, capital gains adjusted for undistributed earnings on corporation stocks, inheritances, and gifts—with an averaging device so that persons receiving from any source an exceptionally large income will not be taxed unfairly.

This consolidation of income and related taxes should be accompanied by abolition of excise or sales taxes, except perhaps those on alcoholic beverages, tobacco and gasoline, which might be retained because of social considerations or because they are large revenue producers at small administrative expense with an impact widely distributed among the population. The steepness of the progressive surtax rates, and the amount of income ex-

empted therefrom, will necessarily depend upon the size of the post-war federal government budget. Specific recommendations regarding these are not made here. The progression in rates, however, should not be stopped at an income of half-a-million dollars, as has been recommended in some proposals for post-war taxation. If the progressive principle is correct up to such a point, it should be continued right on up to the income of ten times that amount reported by one or two individuals in recent years.

CLARK WARBURTON

Notes on Savings in Relation to Potential Markets

I. *The Problem*

Savings of individuals have expanded from a total of 48 billion dollars at the end of 1939 to 156 billion dollars in January, 1946. On the basis of this huge backlog of liquid assets (bonds, deposits, currency) some economists and business analysts have predicated markets for consumer goods. Notable among this group is Professor Sumner H. Slichter, who prognosticated post-war markets under the assumptions of whether savings would be "hot" or "warm," assuming different degrees of price and wage controls.[1] Despite the attention devoted to the holdings of liquid assets by individuals, which will obviously influence the national consumption function, insufficient consideration has been given to the distribution of accumulated savings among the various income groups or to the attitudes of holders of these savings. Before a sound quantitative appraisal can be made of the translation of this potential purchasing power into *effective demand*, information of this character is needed. Such factors as liquidity preferences of individuals and the marginal propensity to consume suggest questions which must be considered before an hypothesis of post-war markets can be made on the basis of the *accumulated aggregate* savings of individuals.

It is the purpose of this paper to depict the wartime pattern of expenditures and savings by income classes, and to examine the significance of this empirical evidence as these factors relate to the forecasting of new markets.

II. *Income, Expenditure, and Savings Pattern*

It should be recognized that during the war phenomenal shifts occurred in the distribution of families and single consumers, by income groups, and that *family* incomes attained their highest level in history in 1944.[2] The

[1] Sumner H. Slichter, "Present Savings and Postwar Markets," *Harvard Business Review*, Autumn, 1943.

[2] The income-expenditure survey conducted by the U. S. Bureau of Labor Statistics covered a cross section of all civilian consumers in 102 urban communities representing all *regions* of the United States and cities ranging in population from 2,500 persons to the size of New York City. Dorothy S. Brady, "Expenditures and Savings of City Families in 1944," *Mo. Lab. Rev.*, January, 1946. Lenore A. Epstein and Ann S. Ritter, "City-Family Composition in Relation to Income, 1941 and 1944," *Mo. Lab. Rev.*, February, 1946. Bureau of Labor Statistics, *Family Spending and Saving in Wartime*, Bull. No. 822, 1945. Also, *Wartime Food Purchases*, Bureau's Bull. No. 838, 1945. For an analysis of the geographic redistribution and inter-regional shifts in income payments refer to Charles F. Schwartz, "State Income Payments in 1944," *Survey of Current Business*, August, 1945.

pattern of distribution of the average money incomes, expenditures, and savings of families and single persons in cities in 1944 is easily comprehended by reference to Tables I and II. The nature of the skewed distribution of money incomes is quite evident from these tables.

TABLE I.—AVERAGE MONEY INCOME, EXPENDITURES, AND SAVINGS OF FAMILIES AND SINGLE PERSONS IN CITIES, BY INCOME CLASS, 1944
[Preliminary, subject to slight revision]

Item	Annual Money Income after Personal Taxes								
	Under $500	$500 to $1,000	$1,000 to $1,500	$1,500 to $2,000	$2,000 to $2,500	$2,500 to $3,000	$3,000 to $4,000	$4,000 to $5,000	$5,000 and over
Per cent of families and single persons in each class	4.2	7.7	7.1	11.9	13.9	13.2	19.9	9.6	12.5
Money income after personal taxes[1]	$291	$764	$1,243	$1,769	$2,251	$2,747	$3,481	$4,406	$7,634
Expenditures for current consumption	594	939	1,317	1,690	1,946	2,375	2,816	3,428	4,324
Food[2]	235	368	506	646	747	908	1,034	1,147	1,383
Clothing	41	82	157	231	268	353	456	621	836
Housing,[3] fuel, light, and refrigeration	178	231	285	328	379	424	484	546	635
Household operation	33	50	64	81	89	109	140	166	306
Furnishings and equipment	5	24	33	43	52	84	92	131	159
Automobile	6	13	36	42	61	104	122	175	171
Other transportation	6	21	28	47	53	52	63	83	114
Medical care	48	67	78	93	95	119	147	191	260
Personal care	12	20	34	42	46	55	64	84	109
Recreation	5	15	25	45	52	62	82	104	137
Tobacco	7	16	25	40	40	47	58	70	75
Reading	8	11	15	18	21	27	32	38	43
Formal education	1	2	1	8	8	14	13	29	41
Other	9	19	30	26	35	17	29	43	55
Personal taxes[1]	*1*	*23*	*70*	*124*	*198*	*283*	*407*	*564*	*2,357*
Gifts and contributions	17	31	52	82	92	136	127	211	454
Net savings or deficit	−320	−206	−126	−3	213	236	538	767	2,856
War Bonds[4]	16	62	40	117	163	230	323	414	1,193
Life and annuity insurance premiums	10	20	43	50	64	80	108	141	269
Other[5]	−346	−288	−209	−170	−14	−74	107	212	1,394
Average number of persons[6]	1.42	1.82	2.11	2.55	2.77	3.00	3.61	3.97	4.02
Average number of earners[7]	.38	.68	1.07	1.16	1.22	1.28	1.56	1.96	2.08

Source: U. S. Bureau of Labor Statistics.

[1] Personal taxes (income, poll, and personal property) have been deducted from income. Total money income may be obtained by combining the amounts shown on line 2 with those for personal taxes.
Inheritances and large gifts are not considered current income; inheritances and gift taxes are excluded from personal taxes.

[2] Includes expenditures for alcoholic beverages.

[3] Includes rents for tenant-occupied dwellings and for lodging away from home, and current operation expense of home owners. Excludes principal payments on mortgages on owned homes.

[4] Value of bonds purchased less those cashed.

[5] These figures represent the differences between income and expenditures plus net war bond purchases and insurance premium payments. Included as savings are amounts deducted for social security, retirement plans, etc., not available separately.

[6] Family size is based on equivalent persons, with 52 weeks of family membership considered equivalent to 1 person; 26 weeks equivalent to 0.5 person, etc.

[7] A family member that worked for pay (as wage or salary worker or on his own account) at any time during the year was considered an earner.

In 1944, it required $1,950 income after taxes for the typical city *family* of two or more persons to "break even" (Table II). Such families spent an average of barely 22 cents a meal per person and $30 a month for housing, fuel, light and refrigeration. They paid $119 during the year in taxes. After taxes nothing remained to buy bonds or to pay life insurance premiums, considered as savings. In order to buy war bonds or pay life insurance

premiums, the average family with a net income of $1,950 had to draw on previous savings or go into debt to the amount of $168.[3]

A fourth of these families depended on more than one earner. It required steady work, 40 hours a week for 50 weeks, at $1.03½ per hour, for one person to provide $1,950 after taxes, or a total of $2,070. This income typically allowed no net savings in 1944 for a family of three. Almost one-fourth

TABLE II.—AVERAGE MONEY INCOME, EXPENDITURES, AND SAVINGS OF FAMILIES OF TWO OR MORE PERSONS, IN CITIES, BY INCOME CLASS, 1944

[Preliminary, subject to slight revision]

Item	Annual Money Income after Personal Taxes									
	Under $500	$500 to $1,000	$1,000 to $1,500	$1,500 to $2,000	$1,950: "break even" point	$2,000 to $2,500	$2,500 to $3,000	$3,000 to $4,000	$4,000 to $5,000	$5,000 and over
Per cent of families in each class	1.5	5.2	5.3	10.7	—	14.0	14.7	23.0	11.2	14.4
Money income after personal taxes[1]	$313	$776	$1,243	$1,779	$1,950	$2,259	$2,757	$3,480	$4,408	$7,595
Expenditures for current consumption	887	1,053	1,407	1,788	1,877	2,051	2,410	2,838	3,439	4,305
Food[2]	374	434	555	701	733	797	913	1,043	1,150	1,386
Clothing	42	80	163	234	250	283	364	462	623	848
Housing,[3] fuel, light and refrigeration	257	251	298	341	359	394	430	488	547	616
Household operation	56	47	66	83	87	93	110	140	166	295
Furnishings and equipment	5	25	39	49	53	60	88	95	132	157
Automobile	16	19	29	42	52	69	105	119	177	171
Other transportation	7	20	26	44	46	50	51	63	84	109
Medical care	62	88	94	105	105	104	123	149	190	265
Personal care	21	19	33	41	43	48	56	65	84	110
Recreation	3	15	28	46	49	55	63	82	105	137
Tobacco	16	15	21	41	41	41	48	59	71	76
Reading	14	13	14	18	19	22	27	31	37	43
Formal education	1	2	2	11	10	9	15	13	29	42
Other	13	25	39	32	30	26	17	29	44	50
Personal taxes[1]	*2*	*13*	*32*	*86*	*119*	*180*	*270*	*402*	*559*	*2,385*
Gifts and contributions	26	30	47	66	73	86	119	119	203	454
Net savings or deficit	−600	−307	−211	−75	0	122	228	523	766	2,836
War bonds[4]	15	81	28	82	105	147	233	316	410	1,206
Life and annuity insurance premiums	14	25	40	59	63	70	83	109	140	263
Other[5]	−629	−413	−279	−216	−168	−95	−88	98	216	1,367
Average number of persons[6]	2.45	2.45	2.78	3.03	3.05	3.10	3.13	3.69	4.01	4.13
Average number of earners[7]	.35	.72	1.15	1.22	1.24	1.27	1.31	1.57	1.97	2.12

Source: U. S. Bureau of Labor Statistics.
For footnotes, see Table I.

of the city families of two or more persons had net incomes below $1,950. The other three-fourths of the families, with incomes of $2,000 and over after taxes, typically managed to accrue some savings, primarily war bonds. Savings comprised up to 10 per cent of income during 1944 only for those whose income after taxes exceeded $3,000. The $2,000 to $2,500 group had average net savings of about $122 (Table II). If net savings

[3] The average family with net income of $1,950 bought war bonds and many paid on life insurance, gave gifts and made contributions to charity including church donations. The deficit represents the difference between income and expenditures plus net war bond purchases and insurance premium payments.

of these amounts were made in each of the previous three or four years, the total would be insufficient to tide most of these families through extended periods of unemployment. Families with lower income accumulated no reserves. To realize family incomes of \$2,500 to \$3,000 a minimum of two members worked in 28 per cent of the families. In half of the families

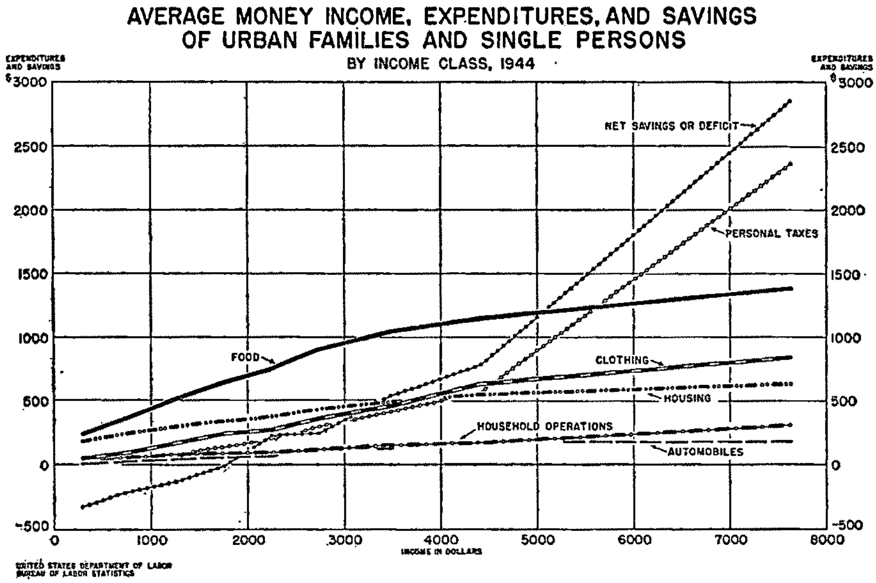

CHART I

with incomes of \$3,000 to \$4,000 after taxes, two or more persons contributed to family funds. Net incomes of \$4,000 or more meant an average of two workers per family in 1944. Accumulated bond holdings at income levels below \$3,000 do not comprise much of a backlog for expenditure on consumer goods.

Approximately two-fifths of all urban *single* individuals living independently had incomes under \$1,150 and accumulated deficits in 1944, whereas the average single person having an income of \$1,150 was just able to "break even." As a group, single persons having net incomes above \$1,500 saved a minimum of 10 per cent of their incomes during the year.

Income-expenditure curves, shown in Chart I, represent the relationship of the outlay of money income of urban families and single persons after personal taxes to expenditures for current consumption. The high degree of skewness shown in these curves and in Charts II and III throws considerable light upon income-consumption patterns (the consumption function for families and individuals)[4] of families and individuals at various income

[4] The *family or individual* consumption function should not be confused with the *national aggregate* consumption function which is ordinarily meant in the writings of John M. Keynes and Alvin H. Hansen. The distinction between the *cyclical* income consumption pattern of the

levels. The income expenditure curve for food is outstandingly convex and begins to flatten off rapidly in the middle income levels. The savings curve is concave upward, is the steepest of all the curves at higher income levels, and indicates that savings take a progressively larger share of each successive increment to income. The curve for personal taxes is also concave upward. In contrast, the major categories of current consumption have convex curves.

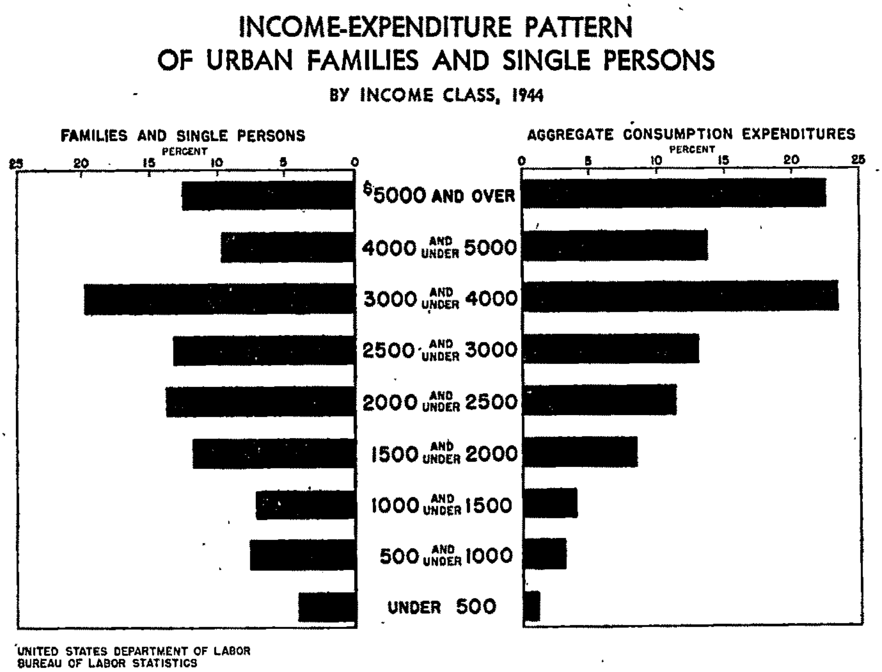

CHART II

Expenditures on food increased as family incomes rose, partly attributable to persons eating more meals away from home and consumption of more food, especially higher-priced foods. Families with net incomes of $1,950 spent practically 38 per cent of that income on food in 1944. Average food costs took about half the income of that 10 per cent of the families with $500 to $1,500 income after taxes, whereas families with $4,000 to $5,000 after taxes used only 26 per cent of their income for food, despite many meals eaten away from home.

A consistently higher proportion of income was spent for food in 1944 than in 1941, particularly at the lower income levels, even though the average size family was smaller in 1944 compared with 1941. Average retail food

national consumption function and the consumption function of an individual is defined in Professor Hansen's book, *Fiscal Policy and Business Cycles* (New York, Norton, 1941), pp. 227–60. Also, John M. Keynes, *The General Theory of Employment, Interest, and Money*, chap. 3.

prices in cities advanced 29 per cent within this period. Similarly, retail clothing prices rose 31 per cent between 1941 and 1944, thus absorbing a larger share of income at each level in 1944. Housing costs (including fuel, light and refrigeration), however, remained unchanged or somewhat lower relative to income, except for families with incomes under $1,000 or who migrated to centers of war production. While workers that moved to war centers usually paid higher rents than prior to the war, the rent-control program stabilized housing costs for many families that did not move. If

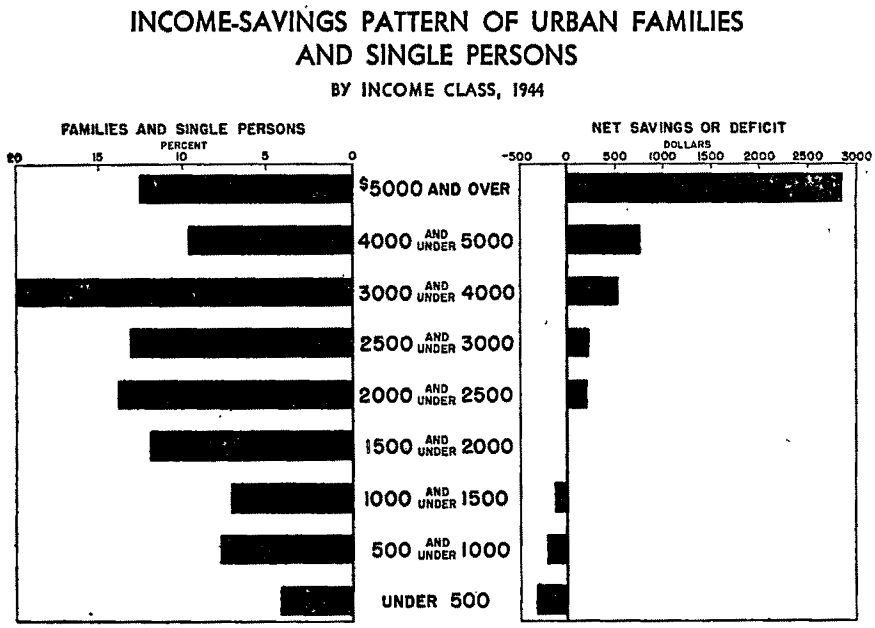

CHART III

their income increased, this meant a smaller proportion spent on housing.[5]

Medical expenses took a larger portion of total income, particularly among low-income families, in 1944 than in 1941, probably because of higher medical costs and need for more care as a consequence of longer hours of

[5] It is interesting to note here that during the past half-century significant changes have occurred in relative proportions of income spent by families for major categories of consumption. The most striking example of this phenomenon is represented by the decreased percentage of average total expenditure for food over this period. This is largely attributable to *progress* in food *production*. While the relative proportions spent on certain other categories of consumption increased, the proportion of money outlay for housing, fuel, and light have remained relatively stable. In contrast to *Engel's law* which is primarily restricted to varying proportions of income spent for various categories of consumption or saved by different income groups at a *particular time*, the following table (on page 897) indicates the *historical development* of these shifts in relative proportions expended for major groups of consumption or the aggregate budget pattern for wage earner's families *over periods of time*.

work. Absence of new automobiles and consumer durables was reflected in the much diminished share of income consigned to these goods. On balance, outlays for current consumption represented a smaller share of income in 1944 than in 1941 among families in the income groups above $2,000 after taxes. But urban families with incomes under $2,000 required a considerably larger share for essential goods and services in 1944 than in the earlier year.

Urban families and single individuals having incomes over $3,000, comprising 42 per cent of the total consumer units, accounted for 60 per cent of the *aggregate* consumption expenditures in 1944 (Chart II). In contrast, urban families and single individuals with incomes under $2,500, comprising 45 per cent of all consumer units, made 27 per cent of the aggregate consumption expenditures. The remainder of consumer units, having incomes between $2,500 and $3,000, which accounted for 13 per cent of the urban families and single individuals, made 13 per cent of the aggregate consumption expenditures.

The skewness of savings *per se* is clearly depicted in Chart III which shows that the high income classes accumulate most of the savings of the country. In contrast to the appreciable net deficits of 31 per cent of the consumer units with incomes below $2,000, Chart III reveals that 64 per cent of the aggregate *annual* savings were made by consumer units having money incomes of $5,000 and over, comprising 13 per cent of urban families and single persons of the nation.

The pilot study of liquid asset holdings in 1945 made by the Bureau of Agricultural Economics corresponded to the findings of the Bureau of Labor Statistics.[6] The BAE study covering both rural and urban areas indicated a concentration of ownership of savings and in each income class there tended to be a few cases of large holdings. The bulk of accumulative liquid assets was held not only by the middle and upper income classes but also by the

CHANGES IN RELATIVE PROPORTIONS SPENT, FOR MAJOR GROUPS, BY WAGE EARNERS' FAMILIES, BY DECADES

Period	Per Cent of Average Total Expenditures				
	Food	Housing	Clothing	Fuel and Light	All Other Expenditures
1869–1879	51.3	16.8	14.9	5.9	11.1
1880–1889	44.0	15.7	18.7	5.8	15.8
1890–1899	42.3	14.3	15.9	6.2	21.3
1900–1909	43.1	18.1	13.0	5.6	20.2
1910–1919	39.9	13.7	15.6	5.2	25.6
1920–1929	37.3	14.6	14.9	5.0	28.2
1930–1935	32.8	16.0	10.9	5.5	34.8
1935–1939	33.9	18.1	10.5	6.4	31.1

Source: National Industrial Conference Board, *The Economic Almanac for 1944–1945*, p. 98.

[6] Emanuel T. Weiler, "Surveys of Liquid Asset Holdings," *Federal Reserve Bulletin*, September, 1945 (Washington), pp. 865–71.

upper third of holders within these income classes. In Birmingham, the 10 per cent of liquid asset holders who individually had the largest amounts of liquid assets owned 60 per cent of all liquid assets in the city.[7] Seventy-seven per cent of the aggregate liquid assets were held by the upper third of the liquid asset holders in Birmingham, Alabama, and Douglas County, Illinois, combined. A dispersion of the upper third of the holders of liquid assets, whose holdings were largest in relation to their income, revealed that they were older, have smaller families, have more education, and have regular methods and specific purposes for saving.[8] This experimental survey revealed first the skewness of savings *per se*, and, secondly that, even at relatively high levels of savings, holders of these assets are not likely to spend them readily for specific purchases of consumer goods.

TABLE III.—CONCENTRATION OF INCOME, SAVING, AND LIQUID ASSET HOLDINGS IN 1945

Spending Units by Percentage Classes		Total for Each Class as Percentage of National Total[a]			
		Money Income	Gross Saving[b]	Net Saving[b]	Liquid Asset Holdings[c]
Top	10 per cent	29	53	60	60
	20 per cent	45	72	82	77
	30 per cent	58	84	96	87
	40 per cent	69	92	105	93
	50 per cent	78	97	111	97
Bottom	50 per cent	22	3	−11	3

Source: *Federal Reserve Bulletin*, June 1946, p. 574.

[a] The spending units with the highest income are not necessarily those with the highest saving or asset holdings, so that different individual units may be included in each percentage class.

[b] Gross saving comprises all individual positive saving (income in excess of expenditures), while net saving is positive saving less dissaving (expenditures in excess of income).

[c] Excluding currency.

Attitudes expressed by these respondents indicated that the desire for *economic security* and advancement has been the leading incentive for accumulation of liquid assets. They did not consider their holdings as funds held for post-war purchases of consumption goods. Rather than use savings, half of the respondents in Birmingham stated they would resort to consumer credit. When asked about spending out of savings, most respondents indicated that they would hesitate to cash war bonds or use time deposits for purchase of consumer goods. Apparently many respondents considered demand deposit withdrawals equivalent to the expenditures of current income.

The national survey of liquid assets made by the BAE,[9] based upon in-

[7] *Ibid.*, p. 868.

[8] *Ibid.*, pp. 868–69.

[9] Henry H. Villard, "A National Survey of Liquid Assets," *Federal Reserve Bulletin*, June, 1946, pp. 574–80.

terviews of spending units,[10] substantiated the findings of the BAE pilot survey. It revealed, moreover, an apparent close relationship between the concentration of current saving and liquid asset holdings, and showed a relatively heavy concentration of these assets compared to income. While 45 per cent of the money income in 1945 was received by the top 20 per cent of the spending units, these units accounted for 77 per cent of the liquid asset holdings. The bottom 50 per cent of the spending units, receiving 22 per cent of the money income, held only 3 per cent of the liquid assets (Table III).

Although the national survey could not definitely establish amounts of savings people *will* spend, it revealed that a large proportion of the spending units stated they had no *intention* of using their liquid assets for any purposte in 1946.[11]

Although the *Braddock Steelworker* study[12] does not give as detailed an analysis regarding age groups, size of family, and other characteristics of the holders of savings, compared to the two BAE investigations, it tends to confirm the latter findings, as indicated in Table IV. Whereas, the *mean* liquid assets of the Braddock Steelworker in January, 1945, aggregated about $800, these savings were concentrated in a relatively small number of families, as 73 per cent of the families had under $800, and 50 per cent had less than $400 in liquid assets.

III. *Some Conclusions*

The empirical evidence clearly reveals that, despite large accumulated *aggregate* savings in the country, we cannot assume that these will be translated into post-war purchases of goods during the next few years. Furthermore, it must not be assumed that a shift in the distribution of consumer units to higher income levels will follow the same pattern of saving and spending characteristic of that class. Other factors such as habits of living, educational training, occupation, and a conventional mode of life may affect the pattern of spending rather than its being determined primarily on the basis of income. The propensity of the consumer to save depends more on his position in the frequency distribution of incomes than on the number of dollars he earns.[13] The correlation between the rate of

[10] Defined as persons living in same dwelling and member of same family pooling their income for major expenditures.

[11] *Ibid.*, p. 576.

[12] United Steel Workers of America, *The Braddock Steelworker*, An Income and Expenditure Study for January 1945 of Steelworkers in Braddock, Rankin and North Braddock, Pennsylvania, pp. 22–28.

[13] W. S. Woytinsky, "Relationship Between Consumers' Expenditures, Savings, and Disposable Income," *Rev. Econ. Stat.*, February, 1946. Also, Dorothy S. Brady and Rose D. Friedman, "Savings in the Income Distribution," paper presented at the Conference on Research in Income and Wealth, November, 1945. Dorothy S. Brady, "Variations in Family Living Expenditures," *Jour. Am. Stat. Assoc.*, June, 1938. J. Marschak, "Personal and Collective Budget Functions," *Rev. Econ. Stat.*, Vol. XXI. Jacob L. Mosak, "Forecasting Postwar Demand," *Econometrica*, January, 1945.

savings and the nominal disposable income must be considered together with the marginal propensity to consume *within income classes*. In view of the practical and theoretical problems involved, determination of the postwar consumption function for consumer goods on the basis of present liquid assets is a complex task.

TABLE IV.—PERCENTAGE DISTRIBUTION OF BRADDOCK STEELWORKERS' FAMILIES BY AMOUNT OF LIQUID SAVINGS ON JANUARY 31, 1945

Amount	Per Cent of Families	Cumulative Percentage
None	2	2
$ 1-$ 49.99	7	9
$ 50-$ 99.99	9	18
$ 100-$199.99	10	28
$ 200-$299.99	10	38
$ 300-$399.99	12	50
$ 400-$499.99	8	58
$ 500-$999.99	23	81
$1,000 and up	19	100

Source: United Steelworkers of America, *The Braddock Steelworker*, An Income and Expenditure Study for January, 1945 of Steelworkers in Braddock, Rankin and North Braddock, Pennsylvania, p. 22.

The propensity to consume and to save at various income levels is illustrated by the income-expenditure, and savings curves in Chart III. It is quite apparent that the income level of families and individuals is extremely significant as a determinant of the proportion of income consumed and saved.[14] A larger share of current income is saved by urban families and single persons in the upper income brackets than by the lower income consumer units. The high levels of liquid assets of families, single persons, and business organizations may tend to promote private capital formation and stimulate investment. An organization having large holdings of liquid assets, for example, may be more likely to invest in new capital formation than a company whose savings are small. While families and single persons are still saving a large part of their income they are likely to hold these assets and *not* spend more of current income *plus* accumulated liquid assets. Some savings will undoubtedly be spent and thus affect current demand, but for the long term the attitude of the holders of liquid assets gives no promise of large-scale spending out of these savings. *Nevertheless, the degree of economic security afforded by savings will tend to encourage more spending from current income and, hence, raise the level of the national consumption function.*[15]

A shrinkage of about 4 billion dollars, or approximately 11 per cent, occurred in the *annual rate* of savings for 1945 compared with 1944, marking

[14] J. M. Keynes, *op. cit.*, chaps. 8, 9, 10. Alvin H. Hansen, *op. cit.*, chap. 11.

[15] S. Morris Livingston, *Markets After the War*, Department of Commerce (Washington, March, 1943).

the first decline since 1938, despite a rise in income payments to 161 billion dollars, the highest for any one year. Since V-J Day, however, consumer expenditures have increased while total income payments were slightly declining.[16] This may be attributed to favorable *subjective* factors[17] encouraging spending more out of current earnings rather than from savings. The *proportion* of consumer expenditures for durables and services is below the pre-war level, compared with the abnormally large percentage spent on consumer non-durable goods.

Shortages of durable goods and homes partly explain the continued increase in savings deposits in mutual savings and commercial banks.[18] As consumer goods reappear on the market, savings deposits will probably advance at a slower pace or level out, as a larger proportion of current income may be spent for goods and less money saved. Accumulation of savings are encouraged primarily by a desire for security against future contingencies, rather than to finance specific purchases of consumer durables. Holders of liquid assets may be expected to maintain their savings largely intact if they maintain confidence in the integrity and value of the dollar and have adequate income to make it unnecessary to use savings for current living expenses. If speculation, encouraged by run-away prices, occurs, however, savings may be diverted to stocks and real estate, culminating in a disastrous deflation. Should this situation arise, the decade of 1929–1939 when savings continued upward despite large-scale unemployment may be repeated. The best assurance for *effective demand* reflected in purchases of consumer goods focuses largely upon sustained high levels of employment, productivity, and *real* consumer incomes resting upon economic stability, rather than relying upon a demand created out of savings.

The tremendous backlog of individual holdings of liquid assets are indubitably potential creators of expanding markets, and will *tend* to raise the *aggregate* income-consumption schedule of the nation. But in the process of making an appraisal of the influence of savings upon new markets, and the extent to which the national consumption function will be influenced, it is vital that the pattern of the distribution of savings among families and individuals in various income classes be given adequate recognition.

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A Note on Expectations

The often-heard dictum that "general expectations of a rise or fall in prices tend to justify themselves" is hardly a self-evident proposition. In fact, it is almost as easy to think of contradicting examples (enlarged production drowning out an expected price increase) as of supporting ones (a

[16] Consumer expenditures in 1945 were 6.5 per cent above the 1944 level.

[17] J. M. Keynes, *op. cit.*, chap. 9.

[18] A larger share of current savings tends to go into bank deposits, as the pressure to buy war bonds is reduced.

stock exchange run in either direction). However, it is not difficult to separate the cases when the dictum is applicable from those when it is not. The answer turns upon whether or not the stock of the commodity concerned is expansible.

First let us consider a good whose total amount is fixed. Stocks and bonds fall under this heading, and if the period considered is short enough to rule out their augmentation, particular inventories or the stock of goods in the economy do also. In the stock market, a general expectation of a price rise (fall) leads to eagerness to buy (sell), which in turn brings about the expected rise (fall). Similarly, expectations of a general rise in the price level leads to eagerness to hold goods, which tends to bring about the expected increase. In these cases, general expectations of a price change do justify themselves.

Now to examine goods whose stock is expansible, or the same goods with a sufficient period considered to allow their stock to be increased. In the previous case, the only persons involved acted as dual seller-buyers, according to the state of their expectations. In this wider case, new figures enter in. One is the producer, primarily a seller. Similarly, the consumer is primarily a buyer. Dual buyer-sellers remain, as speculators and inventory-holders. These categories react differently to expectations of price changes.

1. Suppose consumers alone expect a price change. If they expect a rise (fall), they will increase (decrease) buying, and the price will tend to rise (fall). Consumers' expectations also tend to justify themselves.

2. Suppose producers alone expect a price change. If they expect a rise, they will increase production. But since consumers expect no change in prices no change will take place, until the new goods reach the market—at which time the flood will force the price to fall. For the producer then, the price change induced is the opposite of the one expected. (It is assumed, of course, that there is no real external justification for any of the expectations.)

3. As for the speculators and inventory-holders, their expectations will continue self-justifying in tendency, but only in proportion to their importance in the total demand and supply.

Our examples have indicated that the expectations of speculators, inventory-holders, and consumers tend to be self-justifying. Only among producers are general expectations not self-justifying, because in that case new production is induced (or old production cut down), changing the quantity of the good. It follows that expectations are more likely to be self-justifying where the rôle of the producer is less important: in the short run, where changes of production are difficult, and where speculation is prevalent.

Are there examples on the demand side where general expectations of a price change do not justify themselves? This is a little more difficult, but consider consumers (consumers of labor or machine services in particular for this case) who expect a price fall in a certain length of time, and who have to make present preparations and decisions about buying or employing at that future time.

Then, there will be no change until the plans mature (remembering the assumption that the expectations are not justified by external events). When the plans mature, the increased quantity of labor or machines demanded because of the expectation of a price fall will actually tend to bring about a price rise. Therefore, in this case consumers' expectations are not self-justifying—to the extent that the decisions are irrevocable.

This last hits the crux of the matter. It is the irrevocable decisions made in advance which bring about the unexpected results. Decisions to produce on the basis of an expected price change must be made, irrevocably and in advance of the goods reaching the market. There must be a lag while production takes place. Decisions to consume, on the other hand, do not normally require any lag between decision and impact on the market, and the decision may be revoked if the price change is not as expected. Only if we postulate irrevocability and a lag, as in the above case, are consumption decisions analogous to production decisions, and only in that case do we have the analogous effect of price expectations not justifying themselves. In all other cases, the simultaneous attempt of everyone to profit by anticipating the price change actually brings about the expected change.

General expectations of a price change, then, tend to justify themselves except where they cause irrevocable decisions concerning increases or decreases or production or of future consumption, in which cases the price change tends to be the opposite of the expected one.

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Incidence or Effects of the Corporation Income Tax?

In recent literature on economics, considerable attention has been directed to the important and interesting problem of the incidence of the tax on corporation net income. Not infrequently writers have concluded that this tax is subject to shifting and that its incidence, in part, is on consumers and laborers.[1] Some differences of opinion still prevail, however, with respect to this issue.[2] These differences appear to be due to various meanings attached to the term "incidence." There is a tendency on the part of some writers to make no distinction between incidence and effects of a

[1] The corporation income tax "tends (1) to raise the cost of goods and services, and in some cases to pyramid them, (2) to keep wages lower than they otherwise would be. . . . " See B. Ruml and C. Sonne, *Fiscal and Monetary Policy* (Washington, 1944), p. 10. Also corporate taxation "turns out to be in part a tax upon the income of stockholders, and in part an indirect tax upon consumers, wage-earners or both. The indirect taxation occurs because such taxes are accounted as part of the costs of doing business, and soon or late some part of the tax gets passed on to consumers in the form of higher prices for the goods they buy; some part of it, also, is invisibly borne by workers in the form of lower wages and salaries than they could otherwise receive." See Research Committee of the Committee for Economic Development, *A Postwar Federal Tax Plan for High Employment* (New York, 1944), p. 16. These statements are quite typical of conclusions on that issue.

[2] See, for example, H. B. Bowen, "Incidence of the Corporate Income Tax," *Am. Econ. Rev.*, Vol. XXXVI, No. 1 (March, 1946), pp. 146–47; and Richard Goode, "The Incidence of the Corporation Income Tax: A Rejoinder," in the same issue of the *Review*, pp. 147–48.

tax, specifically the levy on net income of corporations. When the incidence of this tax is interpreted broadly to include its effects on the functioning of the economy, *e.g.*, on investment and business expansion, the conclusion reached with respect to shifting naturally differs from that obtained when incidence is given a much narrower connotation.

According to the orthodox view on incidence, with the term itself meaning "the settling or coming to rest"[3] of the tax, a levy on net income is not shifted and its incidence is, therefore, at the point of impact of the tax. Thus in the case of the corporation income tax, the burden falls first and finally on the owners, or stockholders, of the corporation. The income subject to the tax is the result of a pricing process completed in advance of tax payments and corporation owners are not in position to shift any portion of the tax forward to consumers in the form of higher prices or backward to laborers by way of lower wages. If prices of products to consumers are determined in competitive markets, no control is exercised by a single corporate seller and no shifting of a tax on income is possible. If, more realistically, prices are administered to some degree by action of monopolistic elements, maximum net income is the objective of the controlled price policy even though it is known in advance that the income sought is subject to taxation.

In similar fashion the orthodox view on incidence does not lend support to the belief that the tax on corporation income is shifted in part to laborers. If the labor market is competitive, productivity is the chief determinant of wage and the corporation income tax does not influence labor productivity. If, on the other hand, labor is highly organized and exercises certain monopolistic powers in bargaining for wages, the tax on corporate income does not alter either the strength of the labor organization or the wages received by its members. Corporation officials tend to be critical of the notion that their organization's ability-to-pay, which would be greater if the tax on corporation income were lower, should be a factor to be considered in determining wages to be paid to their employees. The contention that wages of corporation employees will automatically be higher if tax relief is granted to the corporation is pure conjecture.

When the longer run and somewhat indirect effects of a tax are regarded as a part of incidence, it seems to be rather generally believed that laborers and consumers share the burden of the tax on corporation income. There is no unanimity of opinion, however, with respect either to the reasons for the shifting process or to the degree to which the tax is passed along to these segments of the economy. In view of the many factors that may be involved, directly or indirectly, when effects are considered as a part of incidence, it is understandable why difficulties arise in connection with an effort to trace

[3] E. R. A. Seligman defined incidence in this way. See his *Shifting and Incidence of Taxation* (New York, 1921), p. 2. A contemporary writer states that incidence may be interpreted to mean "the relation between the impact of the tax and the prices which are most intimately associated with the point of impact." He is critical, however, of such a treatment of incidence, suggesting that its basic concept "ought to be redefined so as to include not only the repercussions of the tax itself but also the results of the expenditures which the tax finances." See E. E. Oakes, "The Incidence of the General Income Tax," *Am. Econ. Rev.*, Vol. XXXII, No. 2 (March, 1942), suppl., p. 77.

the burden of any tax to its ultimate bearers. Within such a sphere of speculation, few satisfactory answers can be supplied to questions on shifting and incidence of taxes on income, property, estates, retail sales or any other levy.

A strong theoretical case may be advanced in favor of a drastic reduction, perhaps complete elimination, of the tax on corporation income, providing adequate safeguards are established to prevent undistributed earnings from escaping taxation entirely. Investment of venturesome capital would likely be encouraged and a stimulus given to business expansion if income tax relief should be granted to corporations. Laborers and consumers who are adversely affected by any measure, such as a tax law which restricts productive activity, would stand to benefit from an enlivened and more prosperous economy. But the benefits of an altered corporate tax policy which had the effect of encouraging economic activity would not be confined to employees of corporations and consumers of the products of the corporations. Virtually all productive elements within the economic organization would gain indirectly from any move which would result in expansion and prosperity. Yet it is not argued that the incidence of the corporation income tax falls in part on these many productive elements except as they may also be consumers of products of heavily taxed corporations. If the incidence of this tax is distributed among stockholders, laborers and consumers as so often contended, it should follow that dividends would be higher, wages would be increased and prices would be lower if the tax should be reduced or eliminated. Perhaps these results, among others, would be forthcoming over a period of time long enough to allow the benefits of tax relief to be diffused throughout the economy. But what basis is there for believing that only these three groups would be aided? In other words, if incidence includes effects, it seems to be a hopeless venture, probably impossible of attainment, to attempt to determine where the burden of a tax ultimately rests.[4]

In view of the fact that its final effects are of vital importance in an evaluation of a tax measure, it may be argued that it is useless hair-splitting to differentiate between incidence and effects. On the other side of the argument, the point may be made that effects can hardly be determined until incidence in the narrower sense of the term is known.[5] In the case of a retail sales tax, for example, prices of products to consumers tend at once to be higher because of the tax. Recognizing this, it becomes possible then to consider the consequences of this tax on effective demand, production, wages and many other factors. Likewise, in considering the corporation income tax, there may be some advantage in accepting the orthodox view on incidence as a point of departure in an analysis of its effects. It should be

[4] Oakes considers the prospects of finding a satisfactory answer to the problem of incidence in the broad sense of the term by no means encouraging, and he raises "grave doubts concerning our present knowledge of the precise nature of the economic consequences following upon the choice of a levy on net income as compared with other forms of general taxation." *Am. Econ. Rev.*, Vol. XXXII, No. 1 (March, 1942), suppl., p. 82.

[5] Seligman wrote that "it is only when we have ascertained the incidence that we can proceed to discuss the wider effects of a tax." *Op. cit.*, p. 14.

emphasized that laborers and consumers are not the only groups, aside from stockholders, who are *affected* by the corporation tax. The claim that the incidence of this tax is on laborers, consumers and stockholders serves, therefore, only to confuse the issue. The orthodox approach to incidence does not support the claim. And when effects are considered a part of incidence, the claim lacks completeness.

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Concept and Teaching of Economics: Comment

In his criticism of the traditional introductory course in economic principles under this title[1] Dr. Mendershausen confuses two entirely different problems. First, is the content of this course as now given conducive to an understanding of economic reality? Second, should we begin economic instruction with "economic theory,"—that is, a system of necessarily abstract concepts—or should we rather arouse the students' interest by painting broad historical-sociological pictures, starting with the "origin and significance of the Ghost Dance among the American Indians in the late 19th century" and ending up with nothing less than the "Great Depression and the War." That we are actually dealing here with two different issues can be most easily seen in Mendershausen's suggestion that in the later years of college study the students should go "into intermediate, specialized work in economics." Surely, Mendershausen cannot intend that these later courses in economics should take up the teaching of the "rationale of a self-regulating system of markets (market economy)," which he so severely condemns as unrealistic in the earlier sections of his article. He must be referring to a different and sufficiently realistic type of economic theory, though possibly not "pure and systematic" according to his terminology (p. 379); if so, he has failed to demonstrate that it would be impossible to teach an introductory course in "economic principles" using this type of material.

Mendershausen's inability to realize this simple truth is rooted in his persistent identification of "economic theory" with the theory of "a self-regulating system of markets" and the "crusade against the interference with market self-regulation" (p. 379). He would do well to ponder Keynes's dictum: "The theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions."[2]

What Mendershausen does not realize is that any free enterprise system,[3] even if it is not self-regulating and is "interfered" with, can be understood only with the help of the conceptual apparatus which has been largely developed by the neo-classical theory. The very Keynesian system which

[1] *American Economic Review*, Vol. XXXVI, No. 3 (June, 1946), pp. 376–84.

[2] Introduction to the Cambridge Economic Handbook series.

[3] The term is used here as denoting the opposite of a fully-planned collectivistic system.

Mendershausen designates as having closed "the epoch of pure and systematic economics" employs such theoretical concepts as "aggregate supply price," "marginal efficiency of capital," and the like, which cannot be comprehended without some knowledge of the "micro-economic" concepts of the neo-classical theoretical system. And how can the problems of price control or the effectiveness of a "buyers' strike," to mention only a few examples, be explained to someone who has not yet grasped the meaning of supply and demand functions?

It is not necessary to extend this list in order to show that the theory of the "semi-controlled" (or what amounts to the same thing—the "semi-automatic") free enterprise system utilizes the basic concepts of the neo-classical system. We must stress, moreover, that even Mendershausen's so-called "political economy" course cannot give an explanation of the historical events it purports to deal with, without having at its disposal the conceptual apparatus of economic theory. How can "the crisis and debâcle of the French Republic, 1933–1940," second of the topics in Mendershausen's course, be explained without discussing the influence of a reduction of working hours on national income, real wage level, and similar subjects? Explaining "the transformation of English society . . . 1750–1850," third topic in his course, would necessarily involve the instructor in a consideration of the theory of unemployment (technological unemployment *versus* deflationary unemployment). Mendershausen's discussion of the "safety valves" of market economy, fifth in his list, presumably is distinguished from the same chapter in the abandoned "pure and systematic economics" by a critical discussion of their limitations. But is not the law of supply and demand one of these valves? The amount of economic theory in its traditional form necessary for an explanation of the Great Depression need not be expounded here.

Mendershausen shares with the institutionalists and the "historical school" in economics in Germany the error that history[4] can be understood without theory. Although we may readily grant these schools the merit of having forced on economic theorists, two generations ago, a revision of their belief in the self-regulation of the market economy, it would be idle to deny the complete collapse of these schools when faced with the new economic problems of World War I and the 30's. The progress in our understanding of the economic processes of the "late capitalism" has come not from historians but from the theorists, from the climate of Cambridge, Harvard and Chicago.

We have no doubt that Dr. Mendershausen, well-trained theorist that he is, does his utmost to make his students acquainted, at the proper stage of his introductory course, with the basic concepts of economic theory, which, as we have tried to show, are indispensable to an intelligent discussion of four of the six topics in Mendershausen's course. If he did not do so, the discussion of these topics would, indeed, degenerate into a series of "overlapping unrelated inquiries in which economic principles play an unimportant rôle"

[4] At least that kind of history which is more than the philological interpretation of diplomatic documents.

or "a branch of the forensic arts in which any opinion is as good as any other, and in which acceptance is dependent on oratory and authority" (pp. 377–78)—in short, into one of those forum debates in which conservatives and progressives, never changing their original convictions, repeat the stale arguments in party clichés. But since a systematic discussion of the basic theoretical concepts requires all the time available in a 30-weeks course, the average student can hardly get an adequate training in basic economic theory, if much time is given to the discussion of the political-sociological-historical aspects of the four topics cited above and of the two other topics in which economic theory plays only a minor rôle.

There is nothing to prevent the instructor in an introductory course in economic principles from making the abstract discussion of a theoretical system more vivid by relating the theoretical concepts to concrete problems of economic policy or economic development. But even so, abstract theoretical thinking is not everybody's business, and there always will be students who will shun a course on economic principles unless it is remodeled along the picturesque historical lines of Mendershausen's "political economy." But what of it? Let them stay away!

The desirable content of a modernized introductory course in economic principles is quite clear. Negatively, it must refrain from describing the present economy as what it is not—a self-regulating system. In other words, it must discuss the limitations of the stabilizing mechanisms, and the indeterminateness, from the viewpoint of a purely rational theory, to which the modern credit system and the widespread monopolistic tendencies subject the working of the market economy. Furthermore, the course should eliminate all material that is not indispensable for a broad understanding of economic reality, either because it is completely unrealistic (as is a large part of the oligopoly discussion), or because it has not yet been made fruitful (as in the case of the modern stability discussion), or because it has proved its usefulness only for special problems with which the beginner need not be bothered (for example, the indifference curve apparatus). The bulk of the neo-classical theory as developed around 1933 could nevertheless be retained; and it should be enlarged by an outline of the basic concepts utilized, thanks to Keynes, in the "macro-economic" approach to the economic problems of our times.

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Conference on the Teaching of Economics

Until recently economists have paid very little attention to the training of the teachers of the subject in our colleges and universities. Too often we have assumed that the specialized product of a good graduate school would automatically become a good college teacher, if his personality were not too repulsive. A few outstanding economists have gained a reputation as excellent teachers, but no one seems to know just why. Indeed, we have

been far from clear as to the very purpose of college instruction in economics.[1]

A significant step toward better college teaching was taken in 1944 when the American Economic Association established a Committee on the Undergraduate Teaching of Economics and the Training of Economists under the chairmanship of Professor Horace Taylor.[2] This committee not only established ten subcommittees on the varied phases of the subject with a total of seventy-eight members and consultants but also sponsored a lively discussion of undergraduate teaching at the 58th annual meeting.[3]

The most recent attempt to raise the level of teaching took the form of a Conference on the Teaching of Economics at The American University, August 19–31, 1946. At this conference, fourteen distinguished professors of economics discussed objectives and effective methods of teaching for two weeks with eighteen instructors from all sections of the country and from Canada. Special features of the meetings included a demonstration of visual methods of presentation, lectures on government sources of information, a book exhibit and several social affairs. The entire fifty-five hours of the discussion was recorded. The conference was organized by the Teaching Institute of Economics at The American University, which is operated under a grant from the Alfred P. Sloan Foundation. At the same time it represented an experiment by the subcommittee of the Association on "The Training of Teachers of Economics."

Even for the group of leading college teachers, the conference had considerable value. Separated as they are, they would not ordinarily consult with each other on teaching problems for more than a few minutes a year during the annual meeting. For the younger teachers, the experience was unique. Seldom does an economist have a chance to review the currents of economic thought as they affect teaching with a group of experienced teachers who are paying attention to *his* problems.

No attempt was made to formulate the wide range of thoughts and suggestions expressed at the conference into any series of resolutions or findings. Major attention was given to the introductory course, not only because that course is crucial but also because, illogically, most colleges assign this most difficult job of teaching to their least experienced teachers. A good deal of attention was devoted to the sequence of undergraduate work, to the teaching of economic history and to the special needs of business, government and agriculture. At every point the questions of teaching technique were discussed in close relationship to the broad aims and philosophy of the social sciences and to the real needs of students.

[1] The college curriculum in economics has received some recent attention, for example, by Horst Mendershausen, R. W. Harbeson, W. W. Hewitt, L. M. Hacher, R. Clemence, F. S. Doody, and Karl Wm. Kapp. See Horst Mendershausen, "Concept and Teaching of Economics," *Am. Econ. Rev.*, Vol. XXXVI, No. 3 (June, 1946), pp. 376–84 and the references there cited. See also Karl Wm. Kapp, "Teaching of Economics: A New Approach," *Southern Econ. Jour.*, Vol. XII, No. 4 (April, 1946), p. 376.

[2] See Horace Taylor, "Report of the Committee on the Undergraduate Teaching of Economics and the Training of Economists," *Am. Econ. Rev.*, Vol. XXXVI, No. 2 (May, 1946), p. 937.

[3] *American Economic Review*, Vol. XXXVI, No. 2 (May, 1946), p. 845.

Two further steps in the immediate future were advocated by the members of this conference: first, the provision for more and better time at the annual meeting of the Association for the discussion of the problems of teaching; and, second, the arrangement of further conferences on teaching by the colleges and universities.

The single session on teaching at the last annual meeting demonstrated the vitality of the interest of the membership in this aspect of economics. Before the next annual meeting there will be more reports of Professor Taylor's subcommittees than can be discussed adequately at a single session. We seem to need a series of round tables on the teaching of economics where the younger teachers can participate in the discussions.

However important it may be for stimulating advance thought in economics, the annual meeting of the Association cannot, by itself, perform the function of training college teachers. Clearly indicated by the recent conference at The American University is the need to allow younger economists to discuss their teaching problems with teachers who have demonstrated their skill. Some colleges are beginning to pay attention to the conversion of a graduate student into an instructor. They would benefit even more if they would coöperate in arranging intercollegiate sessions where a few of the best college teachers would discuss teaching problems with their junior teachers. The financing of all, or a large part, of the instructors' expenses involved in attending such conferences would constitute a very small outlay in comparison with the benefit to the college in the effective teaching of economics.

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Note on the Effect of Tax Reduction

The December, 1945, number of this *Review* supplies the basis for an interesting synthesis. The analysis of Professor Boulding (p. 868) of effects of progressive and regressive taxes provides a portion of the answer to the differences in opinion indicated by Professor Clark (p. 927) and Professor Hansen (p. 928) regarding a policy of continuous tax reductions to reach higher income levels as compared with a tax policy which would provide a sharp tax reduction at one particular moment of time.

A tax that was decreased by a series of reductions would, in addition to stimulating consumption and maintaining private investment, also provide the type of stimulus to community activity which is pointed out by Professor Boulding as arising from the use of individual regressive taxes (p. 868). The possibility of obtaining a series of tax reductions by increased productive activity contributes an additional stimulus which is over and above that provided by a single sharp tax reduction with constant public expenditures.

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BOOK REVIEWS

Economic Theory; General Works

Beschouwingen Over De Theorie Der Monopolistische Concurrentie. By W. L. Snijders. (Utrecht: Drukkerij Kemink & Zoon. 1945. Pp. 123.)

Beperkte Concurrentie. By J. Tinbergen. (Leiden: Stenfert Kroese's Uitgevers-mij. 1946. Pp. 152.)

It is amazing to see to what extent the subjects of monopolistic and imperfect competition have captivated the minds of economists ever since they were initiated by the writings of Professor Chamberlin and Mrs. Robinson. The bibliography added to the last edition of *The Theory of Monopolistic Competition* carries not less than 457 items, an impressive number even though some of the publications do not exclusively deal with monopolistic competition. Two recent Dutch publications have enriched the literature.

Mr. Snijders's doctoral dissertation *Some Reflections on Monopolistic Competition Theory* is a critical discussion of the theories of Chamberlin, Mrs. Robinson, Triffin, von Stackelberg and Moeller. He dismisses Mrs. Robinson's theory as dealing too exclusively with the sales curve of the firm.

The author gives an extensive summary of the theory of Professor Chamberlin. In line with the arguments of Triffin, Dr. Snijders attacks the basic concepts of Chamberlin, such as the group and the industry. More original and important is his point that the introduction of phenomena like product variation and sales promotion has rendered inadequate the method of treating economic problems as purely quantitative. This basic opinion, which in a sense can be considered the main theme of the dissertation, is applied equally to Chamberlin, Stackelberg and Triffin. Dr. Snijders's point is that there is no quantitative link between the costs incurred in connection with product variation or sales promotion and the ensuing revenue. Only incidentally, *viz.*, via the tendency towards profit equalization through the mechanism of imputation, can a connection be found. It would then follow that any system of equations expressing monopolistic competition, becomes irrelevant and incomplete. On the other hand, Dr. Snijders agrees that the actual significance of the qualitative factors may be limited. For example, for goods the economic valuation of which is highly determined by their technical utility, the possibilities of product variation are much smaller. If expensive long-lasting machinery is needed for the production of a commodity, product variation is limited to those modifications which can be effected with the existing productive apparatus. Or consumers' tastes might be fixed in a certain direction.

Criticizing Triffin, the author says that his coefficient, indicating the degree of homogeneous or heterogeneous competition, is in itself correct, but that his theory of external interdependence is not really a theory, but at the utmost the framework of a theory. The coefficients do not indicate what relationships follow from the maximum profit motive and they ignore the indeterminateness of the equilibrium. Therefore, according to Dr. Snijders, Triffin has not reached his main purpose: a synthesis between the theory of monopolistic competition and general equilibrium analysis. He even considers this synthesis unnecessary, because general equilibrium theory is useful in the first place for the treatment of macro-economic problems. The problems of monopolistic competition, however, are mainly of a micro-economic nature and cannot be handled in equilibrium terms in as far as they are macro-economic.

Von Stackelberg has shown, assuming that two competitors influence each other and that they seek a maximum profit, that equilibrium will not be reached, although formulas for price formation can be computed from certain assumptions concerning price- and volume-dependence, or independence, of each of the competitors. More price precision is reached through Stackelberg's introduction of supplementary price-forming factors, such as the slowness relating to, say, market analysis and calculations and organizational influences (for instance, cartel agreements). Dr. Snijders remarks that in the first place there is no clear link between the supplementary factors and the maximum-profit principle with its ensuing indeterminateness of prices. Then the maximum-profit principle is itself questionable as to its applicability to our problem. The basic economic principle, involving the pursuit of the largest utility, is purely formal. However, for Dr. Snijders the application of the maximum-profit principle to the firm no longer refers to the form of economic acts, but to their contents because "maximum profit in money" is a precise quantitative concept. Now the lack of equilibrium, caused by Stackelberg's purely quantitative postulate, has induced him to introduce elements other than the purely quantitative profit principle, *viz.*, the supplementary factors mentioned. But that implies, Snijders says, that Stackelberg considers in one theoretical apparatus economic behavior at the same time as qualitatively homogeneous and qualitatively differentiated. If the mechanical and quantitative profit principle forms the contents of the entrepreneur's economic acts, then there is no place left for qualitative differentiation. The way out of the dilemma of the insufficiency of a purely quantitative approach is found by Dr. Snijders in Schumpeter's concept of "accomplishing new combinations" ("Durchsetzen neuer Kombinationen") which can serve as the indispensable complement to the maximum-profit principle.

It seems to this reviewer that Dr. Snijders's distinction between the profit principle as opposed to qualitative factors is somewhat overstressed. Slowness of market analysis, calculation habits, price stabilization tendencies and cartel agreements, all can be considered part of the profit principle. Dr. Snijders has perhaps been led astray by Stackelberg's artificial juxtaposition of the profit principle and the "supplementary" factors. Even if the

profit principle could be as narrowly conceived as Dr. Snijders does, then still the fact that no monopolistic competition equilibrium can be reached, (nor need to be reached according to Dr. Snijders's point of view) dismisses the capacity-to-attain-equilibrium as a criterion for the adequacy of the profit hypothesis. The profit principle is then brought back to what it traditionally seems to have been: the not always successful pursuit of a maximum profit by the entrepreneur who is led by (quantitative) calculations and (qualitative) considerations.

As to the lack of connection between the expenses for sales promotion, etc., and the ensuing extra sales, in certain cases there may be a traditional relationship between the amount invested in, say, an advertising campaign and the ensuing extra sales.

On the whole Snijders's book, which has an English summary, is well organized and stimulating.

The title of Professor Tinbergen's skillful book is translated *Limited Competition*. It gives an extensive discussion of monopoly, duopoly and oligopoly, both from a static and a dynamic point of view and of monopolistic competition. The discussion is clear and comprehensive and substantiated by graphs, many of which are original.

There are many interesting things in Professor Tinbergen's book, for example the distinction between active and passive acts of competition. The active acts are those by persons who take the initiative in changing market conditions, the passive acts are by those who adapt themselves to the initiator. For duopoly and also for monopolistic competition Professor Tinbergen uses a curve which connects all those points which indicate the combination of two prices for which the profit of a competitor is constant. This line is used by Tinbergen as an instrument to consider by which method stability is reached in a dynamic duopoly.

An interesting discussion is given by Professor Tinbergen of the problems of horizontally and vertically integrated markets.

Professor Tinbergen sees the limits of the mathematical discussion of the problems in question. Sometimes immediate advantages are insignificant in comparison with long-run goals, for example in the case of forcing a competitor out of the market. In other cases extra-economic factors are of importance and a sociological point of view is necessary. Professor Tinbergen devotes a chapter to the degree of reality contained in the theory of monopolistic competition. He gives a summary of several studies of substitutional elasticity, several of which have been made by himself.

Concerning monopolistic competition Professor Tinbergen follows the division of Stackelberg, *viz.*, in relations of the first order (the same subjects appear on both markets) and relations of the second order between markets A and B (there is a market C which has a relation of the first order to markets A and B). As an example he is treating the relations between two supply monopolies *versus* joint demand, say coffee and sugar. A price increase of one commodity then leads to a decreased demand for both.

However, it is obvious that in this case one can no longer speak of monopolistic competition or even of competition. The interests of the coffee

monopolist and of the sugar monopolist are indeed harmonious. Now it may be true in theory that if the price of coffee goes up, the sugar producer might try to influence the market of coffee, *i.e.*, to increase the sales of coffee. However, he then really becomes himself a coffee entrepreneur. This is quite different from the problems of product variation and sales promotion dealt with by the theory of monopolistic competition. Both for duopoly in one market and the above duopoly *versus* joint demand, Professor Tinbergen uses the formula: (x_1 and x_2 are the quantities sold, p_1 and p_2 the prices)

$$x_1 = f_1(p_1, p_2)$$
$$x_2 = f_2(p_1, p_2)$$

Thus it seems clear that this formula is not representative of monopolistic competition. It is interesting to notice how, under the impact of theoretical tools, the concept competition tends to be diverted from its original meaning. A similar development has occurred in the calculation systems developed by Lange and Dickinson for a collectivist economy to which Hayek has applied the term pseudo-competition.

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Economic Analysis and Problems. By JOHN F. CRONIN. (New York: American Book Co. 1945. Pp. xv, 623. $3.75.)

The stated purposes of J. F. Cronin in the writing of *Economic Analysis and Problems* are such as might preface most balanced textbooks in introductory economics at the present time. He aims to "give the student a comprehensive introduction to modern economic life." As corollaries of this main purpose he has sought an integration of theory with descriptive material, and an integration of the various parts of economic theory itself. Such a program is an ambitious one. But J. F. Cronin's book differs from other texts in its unstated but primary underlying purpose—demonstration of the nature of Catholic social thought, its nobility, continuity since medieval times, judiciousness and practical value for modern life. Thus Dr. Cronin approaches his task with two disciplines as background. He skillfully weaves together his discussion of economic theory and institutions with an interpretation of Catholic thought concerning social structure, social values, and programs of social reform. Aside from the first chapter on "The Rise of Modern Economic Life" and the last two chapters on "Social Catholicism" and the "History of Social Catholic Thought," the underlying philosophic theme is not obviously derived from Catholic thought. In fact, most of the book might have been written by any eclectic middle-of-the-roader. Nevertheless, it is through the normative structure, judiciously applied, that the real integration of the work is accomplished.

Regardless of whether the Catholic teaching is regarded as an advantage or a disadvantage, and in spite of some theoretical defects to be noted later, especially in the presentation of value theory, *Economic Analysis and Problems* is without doubt one of the most able books in introductory economics. Certain characteristics of the writer explain both its assets and some of its defects. Dr. Cronin writes well, with an enthusiasm for his sub-

ject that can hardly fail to be recognized by any intelligent student. The book is rich in illustrations and allusions to both descriptive and theoretical materials, but many of these allusions assume a background on the part of the students that is rarely if ever to be found among the members of an introductory class.

An objective treatment of differing points of view among economists is attempted, with a resulting eclecticism that is sometimes confusing at an elementary level and must of necessity be superficial. The work bears evidence of wide reading of descriptive economic materials and a fair comprehension of the various aspects of modern economic theory. Defects in the theoretical analysis are not the necessary consequence of the underlying Catholic philosophy, but rather of the eclecticism and lack of rigor in Dr. Cronin's thought on some phases of economics itself.

On the surface a remarkable degree of integration of the various aspects of economics, descriptive and theoretical, seems to have been accomplished. It is hardly a criticism of the book that beneath this surface the integration is far from successful. No other textbook writer has fully accomplished this end. Criticism on this score is justified only in that a student of this book might too easily escape into fuzzy thinking in which integration of thought was through normative values rather than through clear-cut analytical thought. So much is presented to the student within the pages of a single chapter that he must be exceptionally keen indeed if he is not to succumb either to complete confusion or simplification through value judgments that fail to recognize the full impact of the reasoning on which they are based.

Certain chapters are worthy of special note for good writing and effective presentation of materials rarely treated with equal skill elsewhere. Thus, Dr. Cronin's "Story of American Economic Life," Chapter II, provides a perspective on social-economic history that enables the student to understand modern economic-political developments far better than anything written elsewhere in an elementary economics text. This chapter suffers, like many others, from an excess of allusions that would be meaningless to most introductory students. Chapter V, on "How Business Is Organized," includes an excellent discussion of some of the social implications of the corporation as corporate controls operate in practice and in view of the concentration of assets in large corporations. Chapter XI, on "Competition and Monopoly in American Industry," should be useful in almost any introductory course; it is based primarily on Clair Wilcox's TNEC monograph on *Price Behavior and Business Policy*. Chapter XVI, on "Public Utilities and Government Control of Monopoly," is weak in economic analysis but nevertheless exceptionally well done in its realistic treatment of some problems of public policy.

The first six chapters of *Economic Analysis and Problems* are intended by Dr. Cronin as a presentation of what he terms the "structure of the economic system." In this they fail. The discussion is not in fact of the structure of a system. Rather, it presents selected materials concerning the social-economic position of major economic groups and some definitions of economic terms, these definitions encased in descriptive discussion intended

to give them more vital meaning. The result is confused. Too many ideas are introduced at once. Some theoretical defects crop out, as when diminishing returns is mistakenly represented as a hazard. Chapter IV is particularly bad; it is really another set of definitions, supplementing those introduced at the end of Chapter III. Despite claims that the discussion is not normative, in fact the writer is less dispassionate than he thinks. He is decidedly pro-farmer and anti-businessman. An illusion of objectivity is maintained in the citing of conflicting points of view. However, an open-minded attitude toward public policy is maintained despite bias in determining the locus of economic sin. The pro-farm slant turns up later in the book in an uncritical praising of agricultural policy in the United States in the thirties.

The weakest part of the book is that on value theory. This reviewer has no quarrel with those who would present a much simplified and curtailed discussion of that topic. Unfortunately, Dr. Cronin falls between two legitimate alternatives. He presents neither a rigorous analysis nor a much simplified one adapted to the particular uses to which he will put it in elementary policy and descriptive discussions. The problem of resource allocation is nowhere clearly defined, despite discussions of alternative opportunity in the making of economic decisions. Marginal analysis is introduced, but it is misused. Firm and industry are not clearly distinguished at many points, for example in the discussion of quasi-rent on p. 166. Confusion is introduced by defining an "increasing cost industry" as one with overhead costs low and variable costs high (p. 157), then introducing another definition later. Distinctions of long- and short-run are introduced and then glossed over in the first and most important (pedagogically) analysis of the relation between adjustments in the firm and market supply schedules. Many of these difficulties are traceable to the faulty use of marginal analysis, which is best shown by a representative quotation (p. 188): "Marginal cost is very important for price determination, since price normally equals marginal cost at the point where it equals the lowest average total cost. At that point a firm receives its highest net revenue, since any variation in either direction will raise total cost more than total revenue. Furthermore, the concept of the margin now aids us in determining the best proportion of productive agents. We find that each agent adds to costs and to production. When the marginal productivity curve of a given series of agents intersects average productivity, we find the point of most efficient use." It is small wonder in view of this confused thinking that the supply schedule of a firm is reduced by Dr. Cronin to a point. Although the discussion of monopolistic price determination in Chapter X hinges on the intersection of marginal costs with marginal revenues, the initial error in the chapter on competition nullifies this fact. Proof of high price and output restriction policies of monopolists is made to rest theoretically on the fallacious argument that marginal costs and marginal revenues must necessarily intersect at a price above and an output short of the lowest average cost point.

Discussion of the problems of full employment, business cycles, and the monetary system follows (after an interlude of descriptive and policy chap-

ters) that of exchange. In the earlier part of the book the writer builds a bridge to this section by skillful introduction of the employment problem at numerous points. His discussion here is much better than that on price and output determination in Part Two. Part Three is opened with Chapter XVII on the "Problem of Full Employment," which gives a good statement of some of the critical issues but is nevertheless analytically unclear and too eclectic. The core of the chapter is Professor Hansen's maturity thesis, with a consideration of the pro's and con's related to that thesis. There is no presentation of the basic topic of income flow through the economy at this point, although it is introduced belatedly in Chapter XIX on Business Cycles. In the business cycle chapter, Dr. Cronin again attempts to do too many things at once, a common defect in writing on this subject. He creates confusion for students by writing as if new gold and expanded bank credit were in some way distinct as income sources from payments of firms to individuals, even when the bank credit is in the form of loans for investment. Thus inflationary financing is so presented as to confuse the analysis of income flow through the economy. There is no doubt that Dr. Cronin himself understands the processes he discusses, but his pedagogy is at this point poor.

Part Four, "Problems and Philosophies of Distribution," is devoted primarily to the programs and philosophies of social reform and among these primarily to programs of religious bodies. It includes three other chapters, however. The first is on "Government Expenditures and Taxation," the second on "The Problem of Functional Distribution" and the third on "The Problems of Labor." There is no descriptive material on the statistics of personal income distribution. Discussions of functional income distribution are frequently a weak spot in economics texts. Dr. Cronin is no exception to this generalization. Here the use of traditional "factors of production" is attempted but without the level of abstraction necessary to handle such an approach correctly. He falls into old and long-standing errors especially in his treatment of returns to "land" and to "labor." "Interest" is treated superficially but more successfully.

Economic Analysis and Problems begins and ends on the main theme that is skillfully but unostentatiously and judiciously imbedded in the body of the book, *i.e.*, Catholic social philosophy in its evolution and applications to the current American scene. Chapter I had set the stage for his entire work. In that chapter the Middle Ages were glorified as an era in which ethical controls dominated social life. There was no recognition of the distinctions between ethical controls and controls by the church as an institution, or between ethical controls and mores. There was no discussion of the relation between laws and mores, or of the institutional center of law-making in church, *versus* state. Such discussions were called for if the treatment of the "Rise of Modern Economic Life" of Chapter I was to match in judiciousness the treatment of conflicting views of economists concerning economic policies of many kinds. Again in Chapters XXV and XXVI a judicious balance is lacking and propaganda seems to be the order of the day.

The student who had pursued with understanding the main body of Dr.

Cronin's economic analysis and discussions of public policy would discover on reading these concluding chapters that the Catholic church had been in the forefront of those major social reforms that are supported by the economic discussion. Perhaps so, but men equally informed concerning social and church history have disagreed with Dr. Cronin. In an objective text it would seem that their arguments deserved attention. For example, has the Catholic church in fact been an *initiator* of reforms designed to curb abuses of big business? Was it historically in the forefront in support of labor unions or of minimum wage legislation? Isn't the logic by which attitudes of Thomas Aquinas concerning interest rates are proven to be not inconsistent with defence of interest in modern times a somewhat contorted logic? Is the consistency of Catholic social philosophy argued by Dr. Cronin quite what he makes it appear? He argues in essence that certain basic principles maintained with continuity through the centuries lead to the middle-of-the-road social program of today as adapted to the external conditions inherent in a complex technological economy; but where is cause and where effect? Is it not possible that those Catholic priests who support a communistic reform program might argue equally effectively for their consistency with historical church position? And incidentally, what is the explanation of the fact that those countries in which social policy most nearly approximates the program outlined by Dr. Cronin are the preponderantly protestant countries? These and many other related questions are certainly deserving of debate if the student is to be introduced to the question of the rôle of the Catholic church in social-economic life and social reform.

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Økonomisk Teori og Metode. By F. ZEUTHEN. (Copenhagen: Nyt Nordisk Forlag. 1942. Pp. 336.)

In his latest book Professor Zeuthen of the University of Copenhagen has made an interesting attempt to survey contemporary economic theory. Both in origin and purpose the book is primarily intended for graduate teaching. It assumes some knowledge of the elements of economics and its chief purpose is to serve as an introduction and guide to a more thoroughgoing analysis of the problems facing our science today.

Instead of making a complete and systematic survey, Mr. Zeuthen has chosen to treat certain methods and tools. The pedagogic purpose is a double one: to make the reader familiar with some of the recent developments of economic theory and also to facilitate its application to concrete problems. Zeuthen's own attitude towards this multiplicity of theories and methods he surveys is well expressed in the introduction: "The number of different viewpoints dealt with in this book should not be taken as an expression of inconsequential eclecticism or 'craze of collecting.' The basic ideas which form the connecting link in reality are rather that the diversity in reality requires the application of different theoretical tools. Furthermore, the many partial economic relationships are mutually interdependent and the best way to integrate the various elements of this theory is to extend

the Walrasian static system to include dynamic relations and also the effects of various market forms."

The book is organized in accordance with the point of view just quoted: Part I deals with general static equilibrium analysis along lines familiar from the Lausanne school or Cassel. The presentation is clear and this part serves as an excellent introduction to the study of the interrelations of markets. The algebraic technique used in simple and numerical examples illustrate the working of the system. Furthermore, the system of simultaneous equations is gradually extended to include a set of assumptions more realistic than those used by Walras. In this connection Zeuthen surveys the fundamentals of static demand and cost analysis.

Part II deals with the foundation of dynamic economics. In the reviewer's opinion it is the least satisfactory portion of the book. The author has intentionally omitted any treatment of problems he considers belonging to the field of "monetary and business cycle theory." The result is, however, that most of the important discussion in connection with Keynes's work has been left out. In addition, Zeuthen maintains a critical attitude towards aggregate economics. Certain elements of a dynamic theory are given (acceleration, lags, uncertainty, etc.) but the final system of equations barely touches the fringe of dynamics. Finally, a more detailed survey of the recent discussion of stability conditions would have helped to orient the reader in this important field.

Part III deals with a selected group of problems in the field of price policy, private as well as public. Professor Zeuthen is himself one of the pioneers in that branch of economics. His presentation of current theories is clear and the approach highly stimulating. This part incorporates among other things the results of the rather intensive work on this front that in recent years has been undertaken by Scandinavian economists, partly in intimate coöperation with engineers and other technicians. (Much of the work is published in *Nordisk Tidsskrift for Teknisk Økonomi*—Nordic Journal of Technical Economics).

As a fairly advanced economics textbook, giving the reader a general orientation in what is going on at the present time in our economic workshop, the book serves an important function. To the best of the reviewer's knowledge no similar book exists in the Anglo-Saxon literature. Without major changes an American-English edition would be highly useful for advanced students and economists who want a general review of the present status of their science.

SVEND LAURSEN

Williams College

Theorie des Mittelstandes. By FRITZ MARBACH. (Bern: Francke. 1942. Pp. 425. S. fr. 12.50.)

The problem of this book is, on the one hand, more European than American, inasmuch as the inheritance of a long and colorful tradition has woven powerful ideological fibers into the fabric of European middle-class life. On the other hand, the approach to the problem is more difficult to

European thinking than it would be in this country. Here the concept of class is generally used in a much wider sense than in most of the European literature, where, following Marx, it is taken to mean that social stratification which arises from the spontaneous economic development of a liberal society; it thus is in opposition to the concept of *Stand* (status group). The question of whether there is not necessarily an element of status in every class structure is implicitly denied by the European terminology, which thus led to catastrophic results in the misjudgment of the future prospects of the middle class. It was assumed that the problem of the middle class would be simply solved by elimination if the middle class, as it eventually must, bowed to an economic development which left no room for its continued existence. That the rise of fascism had much to do with this misjudgment is a commonplace today.

Seen against this background, the special value for Europe of Professor Marbach's strictly sociological point of view is clear. At the same time, this background seems to make the book less interesting for America, where its methodological point of view is much less novel. And the introductory discussion, good in itself, of the relationship between class, in the narrower sense of the group determined by an exclusively economic development, and status group is not strictly needed. This does not at all preclude, however, that the author's skillful merger of economic and sociological analyses is worth while in itself and also sheds light, by implication, on the sociological difference between America and Europe. The book, in other words, contains instructive material and thinking.

Not everything in the author's argument is tenable, and much of it is presented in a manner more cumbersome than would be necessary if he had a clearer understanding of modern economic theory. He criticizes modern theory on social grounds because he does not see that it is concerned with the allocation of scarce things useful in production without thereby prejudging the question of the desirable distribution of incomes: a redistribution of functions or ownership titles could always change the income structure. He is thus led to the Marxian theory of value. He is at great pains to prove that there is, contrary to a widespread prejudice in both middle-class and Marxian circles, a well-marked dividing line between *Mittelstand* and capital, while the middle classes, for all their heterogeneity, are definitely united among themselves by one fundamental common interest, which even joins them to the proletarians, whatever else the differences, which the author is far from belittling. The dividing line against capital the author finds—and quotes the third volume of the *Kapital* in support—is the dynamic nature of capital, which requires accumulation of funds and expansion of business, whereas the "work property" of middle-class producers is meant only to permit them the independent incorporation of their labor and the preservation of the living standard flowing from that labor. It is the expansion of capital, necessitated by competition for technical progress and degressive costs, which constantly threatens the existence of middle-class producers, and to stave off which must be their primary interest. And since that expansion feeds on the accumulation of surplus value withheld from

the workers, the middle-class producers are interested in the workers' receiving as nearly as possible the full value of their contribution to the product. Now this could be inferred also from any other value theory (and least of all needs a circumlocutory derivation from the special Marxian theory of the production of "relative" surplus value): the expansion of capital requires the accumulation of profits, and these, in a system where the workers do not own the productive properties, necessarily accrue in the hands of private owners; the higher the wage, the smaller the profit and the less expansion.

On the other hand, the author overlooks that, as soon as the farmer or craftsman employs a hired man, the alleged solidarity of interests between the two falls to the ground: even if the farmer has no profit, he can employ the other man only at the wage depressed by the exclusion of the workers from the means of production and is to this extent a beneficiary of capitalism. Only the purely self-employed producers, family farmers and their equivalents in trade and craft, are free of that capital interest. The author here seems to ignore that the suppression of the labor interest by the fascist regimes did appeal to large middle-class numbers.

The center of the book is the argument that the same development of capitalism which spells ruin to many middle-class producers is sure to create new opportunities for others. In regard to repair work, etc., this is well known; the author, however, shows that repair work is only one example of the far more comprehensive category of work for individualized needs and tastes and that the growing scale of mass production, which attends the growth of fixed capital, increasingly leaves room for more individualized production. He also points out that producers in the proper sense of the word are better off in this regard than storekeepers, who offer for sale the very same things as the big capitalist store, although there too the catering to individual tastes may present a way out. The entire argument clearly proves the durability of the middle class, and as clearly distinguishes durability from social and economic stability. Indeed, while the total volume of middle-class activities and the total number of people in charge remain more or less unchanged, the composition changes rapidly, the turnover is large. This explains the popular impression that the middle classes are being eliminated: many are on the way out at every particular moment. As middle-class activities supplement the ever-changing production of large capitalist industry, they are subject to the movements of industry.

But new opportunities there are indeed. What strikes the American reader is, of course, the sociological element in the economic argument. The emphasis on individualized tastes and needs is hard to realize in a country that, for all its professed individualism, is the most highly standardized and in this sense socialized country in the world and has been able, on this basis, to develop its mass production; just as, the other way round, it is the enthusiasm for, and the propaganda of, mass production industries which intensifies that tendency to uniformity and thereby the simplification and polarization of the class structure, inasmuch as it is determined by industry.

Peasants are independent middle-class producers too; they are, in a sense, the very paradigm of that category, particularly if they have little or no hired help. The author underlines the basic concept of work property,[1] which defines them. But one can go farther than he does in showing the positive forces which make for the survival and revival of independent peasant farming on a modernized basis, technologically through small machines of a labor-saving character, whose introduction is like the hiring of workers without a labor problem; and organizationally through coöperatives, which make financial, technical, and marketing advantages of large-scale production available to the small units, without gradually superseding the small units, as in the case of the retailers' coöperatives discussed by the author. On the other hand, the entire argument, and the facts described therein, are typically European, as can be seen when the author makes it one condition of "work property" that there be no speculation in land and no profit therefrom, the worker being rooted in the property.

Speaking of white-collar workers, the author pertinently remarks that the distinction between old and new middle classes as coinciding with that between independent and dependent middle classes is wrong and that the two distinctions really cross each other. There have always been salaried bookkeepers and clerks, but in far more individualized functions and greater proximity to the boss than is possible in modern mass establishments. He is emphatic on the sociological significance of the ideological factor, as distinguished from the material-economic factor, which prevents many poorly salaried employees from becoming proletarians, and rightly finds in this tension much of the ferment of modern society down to its most ominous aspects.

At this point especially, as throughout the book, one regrets the complete absence of any reference to the American—as indeed to the non-German-language—literature. Professor Marbach's abortive attempt to demonstrate a unified middle-class interest in limiting capital profit does not fare well if compared with Alfred Bingham's brilliant demonstration of a unified middle-class interest in a greater degree of security than the proletarian workers have, either through work property or through the ownership of a home or through savings or, at least, through longer employment contracts, monthly rather than weekly.[2] Marbach would have benefited by Bingham's book the more as the objectives of both are closely akin. Both also arrive at the conclusion that stability of employment is the democratic interest which unites middle classes and proletarians in a democratic front.

Marbach's discussion of small savings makes a very good point: how

[1] The author gives this reviewer much credit for developing the idea of the independent peasant but strangely, in referring to that precedent, misquotes both the source and the wording of the reference. This reviewer did not say that the work of independent peasants is "a special case of a socialist organization"—which does not make sense—but that it is "a parallel case," inasmuch as work and property, separated in capitalism, are here united on an individual basis, just as socialism wants to reunite them on a collective basis where the work is collective.

[2] Alfred M. Bingham, *Insurgent America—Revolt of the Middle Classes* (New York, Harper, 1935).

foolish is the demand for the abolition of interest, for which not only socialists but even some middle-class propagandists, including some Keynisians, clamor. If interest is an unearned income deducted from the income of labor, it certainly is, on the other hand, deserved in the sense that savings make possible, through a reduction of personal consumption, a frictionless expansion of productive equipment. And it clearly is no class income, but the product of a redistribution of income within the working classes, between their age groups; there is no possible social objection to it. Hence the Marxian attack on it infuriated those who heard their savings from their labor incomes denounced. So far, so good. But the author here again does not go far enough. He distinguishes the working middle class from the capitalists according as there is, or is not, compensation within the same class for the reduction of the labor income by interest. But he overlooks that the real capital income, that of the upper class, is not only socially but even as an economic category totally different from interest on savings. Middle-class savers do not get, as an average, more than the prevailing rate of interest even from their ownership of industrial stocks, buying them as they do at prices which capitalize the expected returns at that rate; while the upper class, in so far as they are the sellers, pocket the difference between the nominal value, which was the amount paid in by them, and that market price. It is not at all clear that much of this upper class income cannot be justified in terms of Schumpeter's theory of profit; but it is clear that this profit is the insider's gain, a capital gain, and altogether different from the dividend of a small investor, which is only the interest on the money he saved and invested in the paper.

EDUARD HEIMANN

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Economic Systems; Post-War Planning

The 21st Century Looks Back. By EMANUEL R. POSNACK. (New York: William-Frederick Press. 1946. Pp. v, 241. $2.75.)

Economists frequently encounter laymen who purport to have discovered the formula which will end the economic ills of the world, and which will improve materially the well-being of mankind. It is not so often, however, that one of these persons writes a book on the subject. Emanuel R. Posnack, a patent attorney by profession, believes that he has found the solution to our economic problems, and sets forth his ideas in a rather unusual book, *The 21st Century Looks Back.*

Mr. Posnack was apparently impelled to write this book by the fear that radical doctrines have become widespread among American youth, and his main purpose is to demonstrate that the solution which he offers within the framework of democratic capitalism is more attractive than the solution offered by radicals. Mr. Posnack's approach to his subject and his use of the past and present tenses are both designed to create the illusion that he is writing in the 21st century, and that the affairs of the 20th century are

history. It is not difficult, however, to see that the organizations and economic policies of the 21st century which he describes are in reality the organizations and policies he proposes for the solution of the 20th century's ills.

Posnack, like many economists, contends that the problems of contemporary society—depressions, unemployment, low living standards, etc.—are the result of frictions, or "barriers" as he prefers to call them, which prevent the smooth operation of a free competitive economy. The methods he proposes for removing these barriers might be classified as "liberal," in the sense that they are designed to improve the well-being of the underprivileged without altering our fundamental economic institutions, and without limiting democratic processes.

He suggests the creation of a number of "global" organizations, including a Global Statistical Service, a Global Transportation Authority, a Global Patent and Copyright Authority, and a Global Technological Development Authority. The Global Statistical Service, with the help of widespread field offices, would be able to provide prospective business men at short notice with information on market prospects, supply of labor and raw materials, and other related matters, for any area on the earth. This service would remove the barriers to the establishment of new business enterprises, by indicating the probability of success of any contemplated business undertaking. It would be financed jointly by the World Bank and the participating governments. All nations, Posnack contends, would be happy to participate, since the financial cost involved would be relatively small and the advantages would be obvious.

The Global Transportation Authority would help redistribute population in such a way as to raise the standard of living of all people. This purpose would be achieved by granting loans covering the traveling expenses of persons from relatively overpopulated areas to areas which could provide them with desirable employment or business opportunities. As a condition for the success of this Authority, the author points out that restrictive immigration laws and other artificial barriers to the free movement of people between countries must be removed.

Mr. Posnack suggests a number of reforms in the existing system of patent and copyright laws, which would be carried through by the Global Patent and Copyright Authority. These suggestions are intended primarily to reduce confusion and litigation in these fields, and to simplify research for prior patents. The Global Technological Development Authority, a huge technical research organization with numerous branch offices, would help improve the technical efficiency of small enterprise and expand the use of scientific techniques in industrial and agricultural pursuits throughout the world. The fruits of its research would be available at a nominal price to all who wished to take advantage of them. The author also discusses briefly several of the existing international bodies, but suggests no basic change in their present responsibilities.

The economic policies recommended by Mr. Posnack are not particularly novel, but are designed to complement the activities of the "global" organizations in removing barriers to free competition and in raising living

standards. Accordingly, he proposes that the anti-trust laws be made more comprehensive and that they be enforced more rigidly. He also suggests that special privileges resulting from the granting of patent rights be scrutinized with great care to assure that these privileges are not abused. To assure the productive use of land, he proposes that all improvements made on land be tax free, but that unutilized land be taxed. He does not make it clear whether the land on which improvements were made should be taxed. He suggests further that taxes on income, gifts, and estates be progressive, but not so high as to discourage enterprise. These economic policies, Posnack states, would remove restraints on production and would provide an incentive to business enterprise.

The book also includes a lengthy critical evaluation of Marxian economics, which need not be described here. Suffice it to say that Posnack's evaluation offers very little that is new, and is not nearly as competent as the analyses made by a number of professional economists.

Posnack's discussion of distribution theory is rather confused. His discussion of rent reveals the influence of Ricardo. His discussion of interest, on the other hand, suggests the Austrian school. While he is aware of the basic theories of distribution, he apparently has not mastered many of their refinements, nor is he consistent in his treatment of basic concepts. For example, in some places he treats capital as a physical concept, and in others as a monetary concept.

Other subjects discussed by Posnack, but not emphasized to the same extent as those mentioned above, include the benefits of a world government, improvements in the administration of national governments, improvements in health and educational facilities, and methods of raising cultural levels.

The reviewer was impressed by the ambitious character of this book. Mr. Posnack, however, bases his work on an oversimplified conception of the nature of contemporary society. Because of this misconception, many of the solutions he proposes are impractical, if not far-fetched. He is certainly much too sanguine about the results which might be achieved by a Global Statistical Service, and the other international organizations he describes. A more satisfactory book of the same scope must await the labors of a more profound and more learned man than Mr. Posnack.

LEO FISHMAN

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Statistical Methods; Econometrics; Economic Mathematics; Accounting

Rudimentary Mathematics for Economists and Statisticians. By W. L. CRUM and J. A. SCHUMPETER. (New York: McGraw-Hill. 1946. Pp. ix, 183. $2.50.)

Revised and extended *Rudimentary Mathematics for Economists and Statisticians,* which was originally published as a supplement to the *Quarterly Journal of Economics* in March, 1938, is now made available in this new volume. It is an excellent presentation of some of the salient mathematical

ideas and techniques useful to economists or students of economics whose formal training in mathematics did not include introductory courses in the differential and integral calculus.

Illustrations taken largely from economics are used to present the mathematics. The total cost of production of an individual producer turning out a single and uniform commodity is used in Chapters I and II to illustrate certain basic ideas of mathematical functions. The analysis is largely graphical, but with an excellent presentation of the relationships between the graphs and their equations. Different conditions are laid down for the relationship between total cost and quantity produced, the geometric and algebraic representations of these conditions are analyzed and related to the derived quantities of average cost and marginal cost.

Probably the most important notion for economists—perhaps for anyone—is the mathematical concept of "limits." The economist's use of marginal analysis has little rigor or elegance without some understanding of the limit idea in mathematics and of the elementary uses of the idea in the differential and integral calculus. Chapters III, IV and V deal respectively with Limits, Rates and Derivatives, and Maxima and Minima, and should be mastered by every student of economics who has not had the benefit of training in the calculus.

In Chapter III the illustration of marginal cost of the earlier chapters is refined by using the "limit" concept, and mathematical descriptions of demand curves and certain historic ideas of total and marginal utility are presented. The marginal revenue curve is also described mathematically and its relationships to the demand curve and total revenue curve developed.

In Chapter IV the elementary methods of the differential calculus are very clearly presented. The derivative concept is explained, the principal rules for differentiating functions of a single independent variable are stated and partially illustrated. Also included are explanations of the notations and meaning of successive differentiation of functions of a single independent variable and of partial and total differentiation of functions of two or more independent variables. The authors have extended this chapter by adding two new sections. The first, The Expansion of a Function of One Variable, pp. 99–102, introduces "Taylor's series." The second, pp. 106–109, covers the mathematical properties of The Homogeneous Production Function.

Chapter V, on Maxima and Minima, which is considerably revised, also includes an entirely new section, pp. 129–133, dealing with The Lagrange Multiplier. In general this chapter presents the methods used to determine maximum and minimum points for simple function and for knowing when they are maximum and when minimum points. One illustration presents the problem of minimizing the sum of the squared differences about the regression line for simple linear correlation.

The last two chapters, the former much enlarged and the latter entirely new, deal with Differential Equations and Determinants. These chapters are much more difficult than the earlier ones, but if mastered as to meaning even if not as to technique, they should help the non-mathematical stu-

dent to read and understand many current writings in mathematical economics.

The volume under review, along with *Mathematical Analysis for Economists* by R. G. D. Allen, does much to fill a pressing need of economists for help in understanding mathematical ideas useful to them. To be really beneficial, however, these aids must actually be used in the teaching of economics.

While the advantages of the more systematic acquisition of mathematical training are weighty, the road to such training is long and cannot be followed by the great majority of students of economics and statistics. Much can be done, however, to teach the essential mathematics useful to economists within the economics curriculum itself.

The advocacy of a condensed and simplified presentation of mathematical ideas useful to economists as part of the general economic curriculum must not, however, be thought of as a substitute for more fundamental training in mathematics for economists. If mathematics is to help economists cut new paths as well as to more meticulously cultivate old ones, basic training in, and mastery of, the mathematical method and tools of analysis will be required by many economists. Economists recruited from mathematics have already contributed a great deal to economics and should continue to do so. It should also be possible to stimulate economists to become masters of mathematics after they have chosen to become economists.

The presentation within the economic curriculum of "rudiments of mathematics" in terms of illustrations known and recognized by economists should quicken the desire for more mathematics by many who would otherwise not have recognized its usefulness. At the same time if "rudimentary mathematics" is part of the training for economists generally, a firmer common ground of understanding will have been established.

Two undesirable aspects of the use of mathematics in economics must be avoided. One involves the use by mathematicians of the subject matter of economics for the development of mathematical exercises without relevance for economics. This is to be feared largely because the critical judgment as to the mathematics involved may not be exercised by mathematicians if the writings appear in the economics field, and the judgment as to economics may also be faulty because of its mathematical form. The second undesirable development would be the use of mathematics by economists with too shallow a grasp of mathematics, so that they merely cover old ground with a new type of exposition.

R. T. Bowman

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Business Cycles and Fluctuations

Lapses from Full Employment. By A. C. Pigou. (London: Macmillan. 1945. Pp. viii, 75. $1.50.)

Professor Pigou seeks to explain to the intelligent layman the causes of unemployment.

His fundamental explanation appears to run broadly as follows. Suppose there is unemployment and the competition of wage-earners leads to a reduction of wage rates. Then prices will fall, and people will wish to hold less money (at a given interest rate) because their real balances have risen. Securities will be purchased, the interest rate will fall, new investment will be encouraged, and thus employment will rise. (The Keynesian conditions which interfere with this process are dismissed as unrealistic.) Pigou therefore argues that the primary cause of unemployment is the non-competitive determination of wage rates by labor unions and government bodies.

He then examines the effects on this analysis of three complications: a structure of wages rather than a single rate; fluctuations in the demand for labor; and labor immobility. Their various effects are diverse or uncertain. But they are apparently overshadowed by non-competitive wage rates, for Pigou's fundamental position continues to be that to eliminate substantial unemployment, we must resort to either a (once-for-all) wage reduction or a continuous inflation that keeps a step ahead of increases in wage rates. Economic policies are not discussed.

The argument is not presented in a manner that will command understanding and agreement in the audience for which it is intended: the analysis is abstract and brief—at times elliptical—and there are many pieces of professional technique. But in this neglected field of economic education, it is hard to find someone who dares cast the first stone. We are perhaps too inflexible: those who really know technical economic analysis cannot bring themselves to forget much of it. And this obstacle is strengthened by the constant realization that the chief readers, or at least the most important readers, of even our most unpretentious works will be gimlet-eyed colleagues.

GEORGE J. STIGLER

Brown University

Full Employment and Free Trade. By MICHAEL POLANYI. (Cambridge: Univ. Press. 1945. Pp. x, 155.)

The author states in the preface: "Keynesian economics must be made simpler and clearer before they can become the common property of all thinking citizens. Being principally devoted to this purpose, this book cannot claim substantial originality; but neither can it be said to represent exactly what Lord Keynes or any other economist has definitely said before."

The author has certainly succeeded in stating the essence of the Keynesian theory of chronic underemployment in very lucid terms. The first chapter, covering more than one-third of the book, should be intelligible even to readers who are not professional economists. The conclusions for monetary policy which the author draws are his own. They are very much in line with A. P. Lerner's ideas on "functional finance." The gap between savings and investment has to be filled by the issue of new money by the government. A budget deficit should be maintained of a magnitude equal-

ling the difference between commercial investment and savings at "full circulation," *i.e.*, at high levels of employment. Financing of this deficit "should be, and can be, carried out in a neutral form, *i.e.*, in a way requiring no materially significant economic or social action to accompany it" (p. 29). The government lives up to this "principle of neutrality" if budgeting proceeds in the following manner: The desired money income of the nation is to be fixed first and the budget to be decided afterwards; these two decisions are to be taken by Parliament. Government experts then have to fix the level of taxation. They do so on the basis of two forecasts: one concerning the fraction of the national income that the public is likely to save, the other concerning the forthcoming private investment. The difference between the two—the Gap—then determines the fraction of government expenditures that the government will finance by the issue of new money. "The new issue must equal the gap and taxation must obviously be fixed so as to cover together with the new issue the total proposed expenditure: Tax+Gap=Budget" (p. 48). This plan would satisfy the "Principle of Neutrality." "The intentions of the public are carried out both in the collective and the private sphere of economic life without subjecting them to any modification for the purpose of maintaining Full Employment" (p. 48).

As the Gap is, in the opinion of the author, a characteristic feature of modern mature economies, this plan seems to imply the issue of new money every year. The author is aware of this but holds out the hope that the public, when its cash balances have risen to a certain (unknown) point, will stop building up cash balances and will begin to spend more. In other words, the author assumes that the consumption function will finally change under the pressure of large cash balances. Saving will decline and the gap will be narrowed or even disappear, in which case public expenditures should be financed by taxation.

The author also deals with trade cycle policy along similar lines, emphasizing that the problem would lose much of its importance since his scheme would guarantee a high average level of employment. In order to support his main thesis the author tries to show that full employment in Russia, in nazi Germany and in the war economy of the western democracies was not the result of central planning but of monetary measures taken by the respective governments (Chapters II and III). He criticizes, in Chapter VI, the British White Paper on Employment and Beveridge's *Full Employment in a Free Society* by comparing his own scheme with the proposals made in these two documents. Neither of these two publications pays any attention to the "Principle of Neutrality." They rely too much on planning. The problems of "bottlenecks," mobility of labor, residual unemployment, etc., are dealt with in Chapter IV.

The international aspects are treated in Chapter V. The author, quite logically, takes his stand against the gold standard in favor of flexible exchange rates, and suggests a World Bank with functions similar to those of the Monetary Fund. His scheme for a World Bank is, however, not identical with the Fund set up under the Bretton Woods agreements.

The author is very sure that his plan presents the solution for the problem of chronic mass unemployment and that it is the only way to save capitalism. There is undoubtedly logic in his proposals, if the underlying assumptions on the causes of chronic mass unemployment are accepted. But even from the standpoint of those who accept the theoretical analysis on which the conclusions are based, the author's proposals require elaboration along theoretical and practical lines.

For instance, the effects of a continuous creation of money on the economic system demand a much more thorough analysis than the author has given them. As a result of the tremendous increase in liquidity, commercial lending by banks would probably be reduced to zero, and since the new issue of money is not to take the form of government-borrowing from the banks, the latter would be deprived of all earning power. The interest rate would probably near zero, which in turn would get all institutional investors into great difficulties. In short, the economic system as we know it would undergo thorough changes that are difficult to visualize beforehand. Yet some speculative analysis of such changes is required before the author's plan can be put into effect.

Moreover, I have serious doubts as to the political practicability of the plan. I look forward with great misgivings to the parliamentary debates in which "the National Income for the next year is fixed" or to the forecasts by "experts" of the fraction of the national income that will be saved or the private investment that will be forthcoming. And I look forward with equal misgivings to a World Bank that bases its policy on Balogh's distinction of "spontaneous" and "derived" international balances of payments, the latter "resulting from readjustments in the level of employment of different countries; while spontaneous balances would be those arising from gradual changes in the productive apparatus of various countries and the growth of trade relations between them. . . ." Spontaneous balances would be left to be readjusted by the market, whereas derived balances would be handled by the Bank! (p. 119).

Reformers are necessary to stimulate ideas and to push the world a step "forward"; and reformers need to have absolute faith in their ideas. Yet the sceptics are equally necessary to bridle the zeal of the reformers. Whether a person belongs to the reformers or sceptics is more a question of temperament than of scientific analysis. The author's ideas, in my opinion, have first to pass through the fire of the sceptics before they can be put into practice.

FRIEDRICH A. LUTZ

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International Trade, Finance and Economic Policy

The Carthaginian Peace—or the Economic Consequences of Mr. Keynes. By ÉTIENNE MANTOUX. Introduction by R. C. K. Ensor. Foreword by Paul Mantoux. (London and New York: Oxford Univ. Press. 1946. Pp. xix, 210. $4.50.)

Twenty-seven years ago, in December 1919, a brilliant young Cambridge man, economist and former representative of the British Treasury at the Paris Peace Conference, burst into fame, which was never to leave him again, through the publication of a violent and scintillating attack upon the Treaty of Versailles, especially in its economic clauses, and upon the men who drafted it. *The Economic Consequences of the Peace* by John Maynard Keynes became overnight a best-seller in England and a few months later in the United States. Translated into more than a dozen languages, hailed in Germany, bitterly attacked in France, it provided the foes of President Wilson and of the peace treaty in America with explosive ammunition, and exercised a profound influence for twenty years and longer upon the current thinking concerning the Versailles settlement. "Carthaginian Peace," he called it, stating that his "purpose in this book is to show that the Carthaginian Peace is not practically right or possible." The term remained in the literature and as late as the eve of World War II one could find the Treaty of Versailles referred to in textbooks by cliché-loving scholars as the "Carthaginian Peace." Even today Keynes's book is frequently mentioned to justify another course of mildness towards our defeated enemy, though one suspects that the book is more often quoted nowadays than carefully read.

For a generation the English-speaking world has been looking at what must be objectively considered as one of the most moderate peace treaties in history, most meticulously concerned over the problem of being just, and most disastrously unenforced in practice, through the prism of this extraordinarily influential book, written in anger, and never revised in the light of subsequent events. What the young Treasury spokesman, later a world-famous economist and a Peer of the Realm might have thought of his early book, when he saw Germany rising stronger than ever from under the alleged ruins of the "Carthaginian Peace," only a few of his intimate friends may know, for he never found either the inclination or the time, in recent years, to comment on it in public. He never came forth to exorcize the ghost whom he had brought himself into being. It remained for one of the outstandingly brilliant young men of the next generation to accept the challenge expressed in the dedication of Keynes's book. "It was to the coming generation that Mr. Keynes dedicated his book twenty-five years ago. This is an answer which comes from that generation." Thus wrote Étienne Mantoux on the final page of his book, in the summer of 1944, before returning into battle (he served with the French Air Forces), greatly distinguishing himself in the liberation of Paris and losing his life in the invasion of Germany. Lord Keynes himself died last spring, as Mantoux's book was in press. We are thus going to be deprived of an extremely important discussion, not only over the merits of the peace of 1919, but also of the peace that may be made in 1947. For the same issues are still with us, though in a new and different setting. The debate between Keynes and Mantoux must go on, even though it cannot be carried out by the protagonists themselves.

It will be realized from the foregoing background observations that the book under review occupies a very unusual position in current economic

literature. Like *The Economic Consequences of the Peace* it is a study in political economy and not in abstract economics. It belongs to that field in which economic and political considerations meet and merge, a field in which so large a part of our destinies is fought over and decided. It is a well-written, scholarly, urbane, yet hard-hitting book. It includes a searching examination of every statement contained in Keynes's work and a very painstaking study of the interwar developments, as they relate to the materials, judgments, and forecasts contained in *The Economic Consequences of the Peace*. Strangely enough, while the politics of Keynes's book were the object of much controversy, its economics were almost never seriously challenged. Clive Day, in an article devoted to Keynes's book and published in the *American Economic Review* of June, 1920, calls the book "a political tract" and expresses the opinion that "the first three chapters are altogether theatrical," but goes on to say that "the body of the book, discussing the terms of the Treaty and of the reparation payment, is sober and trustworthy." This view has been shared by a great many others including Mr. Churchill, another critic of the politics of Keynes's book. It was only Allyn A. Young who attacked the economics of Mr. Keynes as early as February 25, 1920, in *The New Republic*. Mantoux's book is the first serious attempt carefully and critically to re-examine *The Economic Consequences of the Peace*.

Keynes's book contained two principal economic contentions: (1) that the territorial changes made in Versailles would greatly weaken the German economy and decisively impoverish the whole of Europe; and (2) that the burden of reparations envisaged at the Peace Conference was absurdly and mischievously high and entirely incapable of being paid. It is impossible in a necessarily brief review to give a detailed account of Mantoux's critique. Let us only indicate that he clearly shows how Keynes overestimated the impact of territorial change upon the volume of international trade in general and the activity of the German economy in particular, while underestimating very seriously the ability of the new Germany's economy to produce a national income large enough to provide reparations, the ability of the German fiscal system to raise the revenue necessary to pay reparations, and the ability of the German economy to produce an adequate export surplus. Mantoux shows how the developments of the twenty years that followed proved Keynes's anticipations to be unjustified.

Because Keynes predicted that reparations would not be paid, and they weren't paid, he acquired a great reputation as a prophet. But it must be remembered that his own book contributed to the failure of the Allies to *exact* payment. As Mantoux shows, Keynes had also predicted that Europe would be threatened with "a long, silent process of semi-starvation and of a gradual steady lowering of the standards of life and comfort," and yet: "Ten years after the Treaty, European production was well above its prewar level, and European standards of living had never been higher."

Keynes predicted a *decline* in the iron output of Europe; actually this output *increased* almost continuously: "In 1929 Europe produced 10 per

cent more iron than in the record year, 1913." Keynes predicted a *decline* in the iron and steel output of Germany: by 1927 it was 30 and 38 per cent *higher*, respectively, than in 1913 (within the same territorial limits). He forecast a *decline* of efficiency in the German coal mining industry; in 1929 the efficiency of labor was 30 per cent *higher* than in 1913. He predicted that Germany could not export coal in the near future; yet in the first year following the Treaty, German *net* coal exports were 15 million tons and in 1926, 35 million. He estimated Germany's national savings for future years at less than 2 billion marks. In 1925 the figure was estimated at 6.4 billion and in 1927 at 7.6 billion. More importantly, Keynes predicted that Germany could not afford to pay more than 2 billion marks a year in reparations for the next 30 years; yet, between 1933 and 1939 Germany spent 7 times as much a year on re-armament alone.

So much about Mr. Keynes's forecasts. Their failure would be of no particular consequence were it not that on their basis Keynes built a most influential indictment against the economic provisions of the Treaty of Versailles. His book was a campaign document against that Treaty, a brief rather than an objective study. The giant, as we now see, had feet of clay; yet he was powerful enough to contribute significantly to the failure of the last peace. If Keynes's prophecy about the non-payment of reparations came true, it was very largely because reparation payments had never been enforced by the victors of World War I while they were sabotaged by Germany herself. By and by the demands were scaled down until they were wiped out altogether. Simultaneously, along with Allied concessions, grew the power of German nationalism and the strength of the nazi movement. Keynes's book pictured Germany as permanently weakened by the provisions of the Treaty; thus the myth of a "have-not" Germany came into being and falsified the perspective in which the advent of nazi Germany was viewed by the outside world. The great influx of capital into Germany in the twenties far exceeded the total of reparation payments made by Germany at the same time; the figures are, respectively, 21 billion marks paid and 35 to 38 billion marks received, between 1920 and 1931.

The political and moral consequences of Mr. Keynes are also traced by Étienne Mantoux in some of the most penetrating pages of this inexorably logical and painstakingly fair discussion. Space prevents dealing more fully with these aspects of the controversy. One final comment will be of interest, however, to the readers of this review. Keynes's criticism of the Paris Peace Conference stemmed fundamentally from his conviction that the statesmen taking part in it placed the emphasis in the wrong place and failed to realize "that the most serious of the problems which claimed their attention were not political or territorial but financial and economic, and that the perils of the future lay not in frontiers or sovereignties but in food, coal, and transport." In 1946 we seem to behave much more in line with Keynes's views of 1919 in that our statesmen attach much more importance to the economic than to the political factors in the forthcoming settlement with Germany. Since, however, recent history shows that it was *Keynes's* emphasis that was wrong and *not* that of the peacemakers of

Paris—Mantoux's book brings that factor out with crystal clarity—there is much danger in our present outlook. Let us hope that the book under review will be widely read not only in universities but also in governmental bureaus, not only by scholars but also by statesmen. It carries a message which should prove extremely helpful in the work of the contemporary peacemakers.

MICHAEL A. HEILPERIN

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Industrialization and Foreign Trade. Leag. of Nations Pub. II. Econ. and finan. A. 10. (New York: Internat. Doc. Service, Columbia Univ. Press. 1945. Pp. 167.)

In its final volume of post-war studies of foreign trade practice and policy, the League of Nations has undertaken the study of the effects of industrialization of undeveloped countries on the foreign trade of older industrial countries. Like the earlier volumes, *The Network of World Trade* and *Europe's Trade*, the present volume is largely the work of Mr. Folke Hilgerdt; again like the earlier volumes, the present book deals with a familiar and relatively simple problem in international trade theory and practice, but does so with such care, precision and insight into the problem as to illuminate a much wider area than that on which the principal attention is focussed.

The book is divided into two parts. The first of these presents an analytical framework consisting of four chapters dealing successively with a description of the differences between industrial and underdeveloped countries, the nature of the industrialization process in a country, the conditions which are conducive to or retard industrialization, and a deductive sketch of the effects of industrialization on trade. The second part is a long inductive chapter to illustrate statistically the earlier analytical findings. This is based upon world and national indices for manufacturing and trade (broken down into manufactured articles and primary products) for the major trading nations of the world. These statistics, in terms of annual averages for five-year periods for the most part, are included with annotations in an annex.

The findings of the League of Nations are by no means startling. The question addressed is basically the one which Britain was asking herself at the turn of the century: will progressive industrialization and increasing incomes abroad hurt our export trade? The answer is that with expanded incomes in the underdeveloped country, as a result of industrialization, imports increase rather than diminish. The character of imports changes, so that the nature of exports from the older industrial country may have to alter (unless effects in third countries happen to allow it to shift the destination of the exports cut off by industrialization in the first instance). Under conditions of multilateral trade which prevailed up to 1930, however, industrialization tended to promote international trade in manufactured goods. After 1930 and prior to the war, the relationships which had existed over the previous sixty years ceased to exist. Industrialization took place

at the expense of trade in manufactured goods, or possibly was required because of the breakdown in trade.

In addition to making this fairly elementary point, however, *Industrialization and Foreign Trade* has some interesting and useful remarks to make on the differences between industrialization in a sparsely populated country rich in resources, and in countries which are densely populated and backward in productive techniques; on the propensity to import manufactured goods as it is related to the size of the domestic market (population) irrespective of the level of industrial development reached; on the necessity to improve productivity in agriculture and mining (and in backward countries to organize commerce, transport and commerce); on hunger exports of foodstuffs from backward countries which cease or diminish as productivity and output in both agriculture and industry are increased.

The Economic, Financial and Transit Department of the League of Nations considers itself a fact-finding body, rather than a formulator of economic policy. It nonetheless emerges clearly from the pages of this book that it would prefer slow and evolutionary progress toward industrialization based on international coöperation to nationalistic series of five-year plans. The evidence it finds, in a comparison of the decades before 1930 with that which followed, leaves little doubt that it would, if it could, recommend the steady progress of the former period to the disruptive bursts of speed in industrialization in the latter. It may be doubted today, after World War II, however, whether this preference will move many economic policy-makers. International collaboration in industrialization in the world is desired, as Bretton Woods, the International Trade Organization, the World Health Organization, FAO, etc., testify. In some countries, moreover, industrialization (or forced increases in productivity, to use a wider term) can be carried a distance only by external assistance. Where such assistance and international collaboration are not forthcoming, however, the prediction may be ventured that other countries in addition to the U.S.S.R., may set off on the road to industrialization relying mainly on their own efforts. The League of Nations remarks in hortatory fashion (and evidently without the Soviet Union in mind): "Many . . . countries suffer from poverty, cultural backwardness and political weakness and look to industrialization. . . . But they cannot be unconcerned with the effect their industrialization would have on economic conditions elsewhere. If the effect were unfavorable, then the advantage . . . from industrial growth . . . would be offset . . . by the fact that their foreign trade, which depends on prosperity in other countries, would suffer. . . ."

It is clear that the world cannot be unconcerned; it is not equally clear that the backward countries cannot. If the many instruments for international economic collaboration fail both to bring about the increases in productivity and to smooth out the adjustments thereto, it would seem probable that we shall have industrialization with international economic disruption rather than postpone industrialization for lack of international collaboration.

C. P. Kindleberger

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Business Finance; Insurance; Investments; Securities Markets

Insurance as Interstate Commerce. By ELMER W. SAWYER. (New York: McGraw-Hill. 1945. Pp. xi, 169. $2.50.)

When the Supreme Court of the United States held that insurance was commerce,[1] it not only reversed a long line of decisions, which had ruled otherwise, but it also overturned the regulatory foundations upon which the insurance business of this country had developed. The prime objective of Mr. Sawyer's little book is to examine the effects of the decision, and the principles which should guide the formulation of public policy as it relates to insurance.

The author reviews briefly the legal foundations of the regulation of insurance under exclusive state control and then discusses the effect of the decision on that system. He points out that state laws governing rates, foreign corporations, security deposits and taxation will all have to undergo complete revision with the prospect of years of litigation to settle the boundaries of federal and state powers. At the present moment practically none of the legislation rests on a secure legal foundation. Moreover, the decision made many federal laws such as the Sherman, Clayton and Federal Trade Commission acts applicable to insurance.

Public Law 15 was passed by Congress[2] to give the states time to revise their statutes and to provide a basis for collaboration between federal and state governments in the building of a complete system of regulation. Mr. Sawyer analyzes the implications of this legislation and sets forth the principles to be followed in developing a new program. He concludes that the difficulties in the way of success are very great. He insists that there must be a great deal of uniformity in state legislation if collaboration is to succeed and that the most expert administration is an absolute essential. If this does not materialize, Congress will probably take over the whole task. Because of the difficulties involved in collaboration, the author evidently feels that this is the most likely outcome.

It was probably inevitable that sooner or later the federal government would have to exercise some control over insurance. It appears unfortunate, however, that the majority of the Supreme Court did not see fit to render a decision that would have opened the way for congressional action without destroying at one stroke a pattern that had grown up over a period of three-quarters of a century. The consequences of overruling precedents should be given as much consideration as the necessity for doing so. Mr. Justice Jackson sums this up in the closing sentences of his dissent: "To force the hand of Congress is no more the proper function of the judiciary than to tie the hands of Congress. To use my office at a time like this, and with so little justification in necessity, to dislocate the functions and revenues of the states and to catapult Congress into immediate and undivided responsi-

[1] United States *v.* South-Eastern Underwriters Association *et al.*, 322 U.S. 533 (1944).

[2] 79th Congress, ch. 20, 1st session, approved March 9, 1945.

bility for supervision of the nation's insurance businesses is more than I can reconcile with my view of the function of this Court in our society."[3]

This is a very readable, essentially non-technical book written from the legal and administrative point of view, with commendable impartiality. There is no economic analysis, but all who are interested in insurance or the regulation of business will find their time well spent in reading this presentation.

DUDLEY F. PEGRUM

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The Regulation of the Security Markets. By WILLARD E. ATKINS, GEORGE W. EDWARDS, and HAROLD G. MOULTON. (Washington: The Brookings Institution. 1946. Pp. vi, 126. $2.00.)

This short work, the ninth of a series being published by the Brookings Institute and dealing with post-war problems, contains a description of the historic forces that provided the stimulus for government regulation of the security markets, a brief outline of the eight regulatory acts passed since 1932, and a statement of the basic issues remaining to be settled. The book is well written and worthy of attention.

The most valuable part of the study, in the opinion of the reviewer, is that found in the first three chapters where the authors present a penetrating analysis of the shifting forces in the investment markets that have been responsible, during the course of three decades, for conflicting generalizations regarding the permanent place of various financial institutions in the scheme of things.

When corporations expand the scale of their operations they need more capital. A part of this additional capital may be drawn from the investment markets; a part of it may be provided by the accumulated profits of past operations. If a new plant costs less to construct than the old one, a portion of the funds set aside for replacement purposes becomes available to finance expansion. Conversely, if a new plant costs more to construct than an old one, funds set aside for replacement purposes will be inadequate and resort must be had to the investment market to maintain operations. The close relationship of the commodity price level to the quantity of new financing is thereby suggested.

During World War I corporations relied for the most part upon bank loans to finance expansion. After that war they continued for a while to use banks as a source of funds to finance peacetime operations. Their disastrous experiences during the early twenties in liquidating large inventories while commodity prices declined caused them to turn from bank financing to stock financing whenever possible. The shift from bank to stock financing was accepted at the time as representing a permanent change in business methods.

The decline in industrial activity which followed the stock market crash of 1929 decreased the need of corporations for funds to finance expansion.

[3] 322 U.S. 533, *supra cit.*, pp. 594–95.

The accompanying decline in the level of commodity prices made it possible for corporations to finance current operations with less and less capital. These two forces were responsible, the authors believe, for the stagnation of the capital markets and the belief held by many that corporate need of a capital market was a thing of the past.

Then came World War II with its great increase in industrial activity. This time fixed capital needs were supplied by government-owned plants and by government loans to private industry. Increased working capital needs were provided by government supplying of materials, advanced payments on contracts and by government loans. The cessation of fighting leaves industry in need of large quantities of funds to purchase government-owned plants, to reconvert to peacetime production, and to finance current operations on a scale larger than before the war. The quantity of funds needed is further augmented by the high level of commodity prices in much the same manner as they were lowered during the thirties by the low level of commodity prices. The authors are of the opinion that this high price level is a permanent feature of our national economy due to high wage rates and to the policy of encouraging high farm prices.

Admittedly some of the current capital needs of industry will be provided out of accumulated past earnings of corporations but in the main the condition that now exists in the capital markets will contrast sharply with the situation that existed during the pre-war years.

Chapter IV of the study gives the background of regulation and Chapter V describes each of the eight regulatory acts now in effect. The treatment is too brief and non-technical to be of much use for reference purposes to students of finance, but economists and others whose interest is general will find the chapters useful as containing a handy concise summary of recent developments in the field of finance regulation.

The last chapter, VI, lists ten issues now requiring analysis and very briefly presents the opinions of the authors on each.

WILFORD J. EITEMAN

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Public Control of Business; Public Administration; National Defense and War

The Concentration of Economic Power. By DAVID LYNCH. (New York: Columbia Univ. Press. 1946. Pp. x, 243. $5.50.)

Economic Concentration and World War II. By JOHN M. BLAIR *et al.* Report of the Smaller War Plants Corporation to the Special Committee to Study Problems of American Small Business, U. S. Senate, 79th Cong., 2nd Sess. (Washington: Supt. Docs. 1946. Pp. xv, 359.)

Concentration of economic power still is a menace, and may well be a growing one, to the American way of life. While the winning of the war

has greatly relaxed our alertness, it has not removed the danger. The very industrial gigantism fostered by huge war contracts, however necessary, may, unless neutralized, nourish speedily within our borders the same enemy "new order" of monopolistic, cartelized, corporate statism which abroad cost so much blood and treasure to exterminate.

A good deal of political and economic thought these days is afflicted with a selective and dangerous blindness. Even those active in the Temporary National Economic Committee had no clear perception of the rôle of international big business and its considerable responsibility for the horrible nazi-fascist monolithic power structure. Only in 1942 with the revelations of the Senate Committee on Patents under Senator Bone, highlighted in Gunther Reimann's *Patents for Hitler* and Joseph A. Borkin's and Charles S. Welsh's *Germany's Master Plan*, did the incredible fact come to public attention that American and German big business had to some extent coöperated in carrying out the enemy's industrial offensive. Fuller documentation was provided in 1944 and 1945 by Senator Kilgore's subcommittees of the Senate Committee on Military Affairs and published in scores of volumes of hearings. Numerous anti-trust cases together with tons of records obtained in Germany have fully justified the titles of such books as Wendell Berge's *Cartels, Challenge to a Free World* and especially David Lasser's *Private Monopoly, the Enemy at Home*. Yet today even the top enemy industrialist conspirators have not been brought to book. Some of them, in fact, have been retained by military and diplomatic brass-hats as trusted advisers.

It is fortunate, therefore, that two books should now appear re-emphasizing the problem of concentration of economic power. While Dr. Lynch's volume brings no new facts, it does do the highly necessary and tedious job of distilling the essence of some thirty volumes of TNEC hearings. Moreover, in its frank and critical appraisal it explains why the TNEC failed in so many respects. It ably diagnoses where the committee was unable or refused to see personally or politically unpalatable facts and truths.

Dr. Blair's book, on the other hand, presents no conclusions or evaluations. But it carries forward a large number of primary statistical series into the post-war period, showing, for example, by size of firms not only World War II production, profits, assets, employment, and mergers in general and in various war and non-war industries, but specifically listing the most important companies and their allotments of prime war contracts, basic materials, new facilities, government funds for scientific research, etc. Its 146 statistical tables and 58 charts provide a gold mine of up-to-date information.

Much attention has been given to the fact that during the war the 100 largest contractors were awarded about 75 per cent of the active prime contracts, but this in reality is, relatively speaking, of minor importance.

Consider, for example, that merely the working capital added by the 68 largest corporations during the war is equal to 94 per cent of the prewar net assets of all manufacturing concerns in the United States; or that the percentage of total manufacturing employment in firms employing

10,000 workers or more increased from 13 per cent in 1939 to 31 per cent in 1944.

Even more disturbing is the fact that of the $28 billion of manufacturing facilities constructed during the war (a figure to be compared with $40 billion worth in the whole United States in 1939) not only was more than four-fifths operated by the 250 largest concerns, but nearly half of the government-owned plant disposed of thus far (there will be about $20 billion worth useful for peacetime purposes) has been acquired by only twelve corporations.

To descend from the stupendous to the lilliputian: In the fiscal year 1946–47 the total appropriation for agencies whose duty it is to enforce the anti-trust laws is less than four million dollars. Enough to finance about 35 minutes of the war!

II

The basic weakness of Dr. Lynch's discussion of the work of the TNEC stems not from the fact that he specifically limited his task and omitted consideration of the monographs, but that he took no cognizance of their real purpose, importance and organic interdependence with the hearings.

Precisely because the committee was engaged in conducting a study, not a witch hunt, it placed major reliance for systematic development of fact on monographs, having constantly in mind as models the extraordinarily useful monographs of the National Monetary Commission. Realizing in advance that little in the nature of significant majority recommendation could emerge from such heterogeneity of membership, particularly on bitterly controversial topics, the committee consigned such items for exploration to experts, *e.g.*, lobbying, taxation and tariff. Thus reams of talk could, in some cases, be reduced to objective statistical series.

As a result Dr. Lynch makes several serious misrepresentations of the work of the TNEC. Thus, for example, in commenting on pressure groups he states "no effort was made by the TNEC to appraise this trend or to assemble facts as to its existence" (p. 144). But he fails even to allude to, or include in his bibliography, Professor Donald C. Blaisdell's notable study on *Economic Power and Political Pressures* (TNEC monograph no. 26) which constitutes the most comprehensive, systematic documentation of the matter extant today, heavily drawn on by Stuart Chase in his *Democracy under Pressure*.

Again, Dr. Lynch states in his interesting chapter on appraisal that "what concentration is and how it is measured was left unanswered. The extent to which concentration is characteristic of the economy was left to conjecture" (p. 360). This is no doubt in part true, but he ought to have considered such notable monographs measuring concentration as that of Clair Wilcox on *Competition and Monopoly in American Industry* (no. 21), or Willard L. Thorp's *Structure of Industry* (no. 27) or the two studies by the staff of the Securities Exchange Commission on *Distribution of Ownership in the 200 Largest Nonfinancial Corporations* (no. 29) and *Survey of Shareholdings in 1710 Corporations with Securities Listed in a National Securities Ex-*

change (no. 30). Two or three others presented indicia of concentration such as number of employees, profits, cash holdings, working capital, etc.

Furthermore, how is it possible to state flatly "Some issues, such as taxation and fiscal policy, were neglected; others (such as the relation of tarriff to concentration) were evaded" (p. 361) without even slightly warning the reader that such statements were valid only for the hearings? Of the eight monographs (there were 43) which Dr. Lynch does include in his otherwise extensive bibliography on the TNEC, three apply specifically to taxation. "Neglected" is surely an inappropriate epithet even if Dr. Lynch's judgment of the merits of the tax monographs should be highly adverse. "Evaded" seems even less felicitous, especially since the notable pioneer study of Professor Clifford James, *Industrial Concentration and Tariffs* (monograph no. 10), is nowhere mentioned.

I shall not belabor the point further. Several additional examples could be cited.

III

In his appraisal of the work of the TNEC Dr. Lynch skillfully carries water on both shoulders. Its hearings and reports, he predicts, "will often be cited as a fountainhead of authority. Like the writings of Adam Smith, the Bible, and the epigrams of Confucius, they will be invoked by men of little knowledge to awe and convince others of equally limited understanding" (p. 356). Furthermore they represent "merely a labored and unnecessary catalogue of the obvious" (p. 173). Nonetheless the TNEC "takes its place among the great investigations of the English-speaking democracies" (p. 378). "Its full influence" (like that of the Bible?) "will be reflected in the thinking of the populace, of scholars and of those responsible for designing and administering public law" (p. 354).

The TNEC, says Dr. Lynch, failed miserably in many respects. It failed to answer the question, "If monopoly, in what areas, to what extent and by whom?" It evaded the problem of competitive advertising and the economics of selling costs. It made no historical study of the functioning of the anti-trust laws. "The relation of monopoly and of bigness," he states, "to economic efficiency went quite unexplored" (p. 365). "The problem of idle factories and idle workers received scant consideration" (p. 367). "The Committee offered no program relating to the achievement of full employment" (p. 368), except that it "would have no truck with those who adhered to the mature economy theory" (p. 348).

IV

No doubt future economic historians will modify both Dr. Lynch's strictures and his praise. Many of the newspaper stories and editorials which Dr. Lynch relies on so heavily in his early chapters to support his exposition of the political and economic events of the 1930's will be supplanted by objective records. The origin of the TNEC at such time will surely be traced back at least in part to a report made in December of 1935 to the Senate Committee on Manufactures by Leon Henderson and Theodore J. Kreps

entitled "On the Necessity for an Inquiry into the Status of Competition." The views and limitations of the personnel of the TNEC will indubitably prove markedly different from those alleged over press and radio.

In short, while the definitive job of evaluating the totality of TNEC achievement and failure has yet to be done, Dr. Lynch deserves a generous meed of praise for doing the vital spadework of summarizing a good deal of what has been done thus far. Taken in conjunction with Dr. Blair's illuminating compilation showing how quickly concentration of economic power has grown in the five-year period from 1939 to 1944, Dr. Lynch's work demonstrates the urgent necessity of a continuous social and economic audit of the performance of our business system, in sum, a revived TNEC. Only in the light of thorough knowledge, kept up to date industry by industry and firm by firm, can those wise measures supplementary and alternative to industrial atomization be devised or judiciously applied which will enable economic and institutional innovation to keep pace with modern technology.

THEODORE J. KREPS

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Industrial Organization; Price and Production Policies; Business Methods

The Executive in Action. By MARSHALL EDWARD DIMOCK. (New York: Harper. 1945. Pp. ix, 276. $3.00.)

This book will be of little interest to economists and, I suspect, disappointing to students of public administration, in which field the author has written extensively. Professor Dimock's personal experience in one government agency provides virtually all the illustrations for generalizations which are stated to be applicable to all types of organizations, public and private, profit and non-profit. "Having recently completed six years of executive work myself, following ten years of investigation and university teaching in the area, this seems to be an opportune time to say what I have to say" (Preface, p. vii). If the author had relied more extensively on the results of his research and had not been so anxious to report his reflections based on his personal experience as an "executive in action," we should have had a more scholarly and, generally, a much better book.

Professor Dimock promises to answer the question: "What does the operating official do?" Instead, the book deals largely with what, in the author's opinion, executives *should* do, what the desirable qualities of the good executive are, etc. The book is a sort of manual for executives in business and government. The emphasis throughout, as might be expected, is on the administrative side—on the handling of organizational relationships, both internal and external.

Professor Dimock unquestionably knows a great deal more about business organizations and business practice than this book reveals. There are sur-

prisingly few specific references to leadership problems and practice among our larger business firms. There are two or three references to the American Telephone and Telegraph Company, a favorite illustration among students in public administration, and one or two to General Motors. There is a passing remark concerning internal financial control in the automobile and chemical industries (p. 208) on which I should like to see the evidence for I do not think the generalization as stated is true. Virtually all of the discussion is obviously based on the problems of government administration, particularly that of the federal government, and some of the discussion, for example that dealing with financial planning and control, seems indeed strange when applied to large-scale private business. Roughly a third of the book presents illustrations from the author's experience as head of the Recruitment and Manning Organization of the War Shipping Administration, and all too often generalizations are based on no evidence or illustrative material beyond this.

In his final chapters, the author broadens his discussion to consider the nature and causes of bureaucracy, and in the last chapter, which bears the promising title "Optimum Size," he considers the possibility of conquering the bureaucratic ogre. His analysis, however, makes little contribution to the existing literature; it is generally superficial and frequently confused. Causes, effects, and particular aspects of bureaucracy are on more than one occasion hopelessly mixed.[1] His final suggestion for combatting bureaucracy in government and business—decentralization—is an anticlimax which would provide very little remedy, and in addition confuses geographic decentralization of operations and decentralization of authority.

These criticisms could be expanded. In fairness to Professor Dimock, however, I should note that he does offer some good practical advice to executives, that he properly emphasizes the similarities between private and public administration (although he neglects the differences), and that his emphasis on the need for flexibility in organization and his warnings against overdoing organization planning and following too closely the advice of the organization expert are in refreshing contrast to what I have found in some of the literature in this field.

R. A. Gordon

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Industrial Management in Transition. By George Filipetti. (Chicago: Richard D. Irwin, Inc. 1946. Pp. v, 311. $3.75.)

This is a well-written and thoughtful review of the gradual development of principles of management from the days of Frederick W. Taylor to the present. In it the author has attempted to present a treatment of evolu-

[1] On page 230, complexity is stated to be "the most general underlying cause of bureaucracy . . . but there are other specific institutional and administrative causes as well." Then the following jumble of causes, effects, and symptoms of bureaucracy are listed: size, organization, specialization, rules and regulations, character of executive direction, improper staff activity, central staff controls, group introversion, lack of sales motive, security, seniority, and age and tradition.

tionary management which points out some of the things that constitute good managerial principles, and probably good managerial techniques, whatever form of industrial organization is developed. The author has made no attempt to introduce any of his own philosophy, but has reviewed and interpreted the works of a number of writers who, through the years, have presented varying points of view. Whether or not the authors Professor Filipetti has reviewed would regard the selections as thoroughly representative of their philosophies and his interpretations as sound, it is the opinion of this reviewer that the work has been well done.

It is a timely book. Its reading will bring to the minds of economists and business leaders works long ago forgotten, and may acquaint them with some writings they never have had time to read. In three hundred odd pages there is a comprehensive summary of many thought-provoking books, which, in the present state of industrial turmoil, should be read and studied. *Industrial Management in Transition* will save an incalculable amount of time for overworked students of industrial management.

The book starts naturally with a summary of Frederick W. Taylor's *Shop Management* (1903). Taylor's analysis of the psychology of the worker was at fault, but his fundamental reasoning is sound—pay a first-class worker more than the going rate for his grade of work. When once established, the rates should not be reduced. In another place (p. 44), the author observes, "His basic concept was correct, namely, that at any point in time any significant increases in wages and shortening of hours in an individual plant should be accompanied by increased production."

A review of Taylor's *The Principles of Scientific Management* (1911) is presented in the author's own words, enriched by extensive quotations from Taylor's book. Henry L. Gantt was a disciple of Taylor. Gantt's *Work, Wages and Profits* (1910) is thoughtfully reviewed, followed by a few pages on the life and philosophy of Frank Gilbreth, which is drawn partly from Lillian Gilbreth's *The Quest of the One Best Way*. Harrington Emerson's philosophy is treated, perhaps too briefly (two and one-half pages), in the same chapter. This is followed by a more complete review of Morris L. Cooke's *Our Cities Awake* (1918), a book of merit, which probably has been forgotten by many students of city management.

In Chapter V, Robert F. Hoxie's *Scientific Management and Labor* is summarized with constructive criticism. Hoxie, thirty years ago, had a point of view which many industrial leaders since have come to accept. Labor's attitude, on the contrary, may not have changed appreciably. In the same chapter is a review of C. Bertrand Thompson's *The Theory and Practice of Scientific Management* (1917). It is a somewhat detailed analysis of the successes and failures of Taylor's principles, written after four years of study by Thompson.

Chapter VI bears the title "Evolution of the Movement Following World War I." This chapter reviews the writings of a number of students of management in both the labor and managerial fields, and indicates a drift toward the acceptance of the idea that increased productivity should be an objective of labor. It also suggests a modification of the unyielding

attitude formerly apparent in the minds of some managers. Among the writings discussed, *Waste in Industry* (1921) is set out as a study worthy of analysis as marking a forward step in the science of management.

The remaining chapters of the book are less historical in their content and present later-day concepts of management. Although the first book reviewed is Fayol's *Administration Industrielle et Générale*, which was written in 1908 and translated into English in 1925, its philosophy is a wide departure from that of the earlier American writers. It deals more particularly with the hierarchy of higher levels of supervision, right through to the coördinating head. Another book, written in 1927 under the auspices of the International Labour Office, was *Scientific Management in Europe*. It is a résumé, similar to Professor Filipetti's, of the writings of European students of management, following the initiation of the management movement in the United States. In the same chapter is a review of *Management in Russian Industry and Agriculture* (1944), a work but little known in the United States to which Professor Filipetti devotes twelve and one-half pages. "The real measurement of the Russian industrial accomplishments is to be found, not in comparing it with the industrialization of Germany or England or the United States, but in comparing the industrial development and the standards of living of the great masses of people in the period between the czarist regime at the time of its overthrow and the years before World War II" (p. 203).

Chapter VIII treats of the American development just before World War II, drawn largely from *Management and the Worker* (1939) by F. J. Rothlisberger and W. J. Dickson, as well as *Organized Labor and Production* (1940) by Morris L. Cooke and Philip Murray. This review of a labor program is followed by a second labor program based on *The Dynamics of Industrial Democracy* by Clinton S. Golden and Harold J. Ruttenberg (1942).

Following the foregoing analysis of writings on present-day labor philosophy, the author runs through a few books on managerial organization. The first is *Multiple Management* (1938) by Charles P. McCormick, which describes a plan adopted by the House of McCormick to bring supervisory management at the lower levels into the counsels of the managing group. This is followed by *Top Management Organization and Control*, a Stanford University report (1941) under the direction of Paul E. Holden, dealing with the managerial practices and procedures of large corporations. Next is reviewed another book dealing with top management, *Business Leadership in the Large Corporation*, written by R. A. Gordon for the Brookings Institution in 1945. In large corporations, the managing group is composed of able, trained, professional leaders who of necessity apply sound principles of management to their daily tasks. These principles can be used with equal effectiveness by managers of small industries. *Dynamic Administration* (1942) by Mary Parker Follett next is reviewed.

In the final chapter, the author has selected four more or less philosophical works: *The Industrial Discipline* (1933) by Rexford Guy Tugwell, a plan for industrial organization along somewhat revolutionary lines; *The*

Managerial Revolution (1941) by James Burnham, presenting the argument that control is passing from the hands of the legal owners into the hands of a professional managing group; and *Management of Tomorrow* (1933) by L. Urwick, which is followed by an analysis of *America Unlimited* (1944) by Eric Johnston. The two books last mentioned present the theme that research in management is urgent.

The selection of books thus summarized by the author may be criticized for the inclusion of some less noteworthy works and the omission of others, such, for example, as *Onward Industry* by Mooney and Reilly. Nevertheless, any omissions can detract little from the merits of a task well done. It is the expressed hope of the author that readers of his book will find their interest sufficiently aroused to read in their entirety some of the books on management which he has summarized. Whether or not many of them have time to do that, a reading of *Industrial Management in Transition* will convince anyone that, halting as the progress has been, the years since Taylor's death have brought about an approach to industrial efficiency.

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Labor and Industrial Relations

Government and Labor in Early America. By RICHARD B. MORRIS. (New York: Columbia Univ. Press. 1946. Pp. xvi, 557. $6.75.)

Professor Morris has written a long-needed and exhaustive treatment of governmental supervision of labor in the colonial period. In its preparation he has searched contemporary British and American statutes, newspapers, letters, travelers' accounts, business papers and similar documents, and in addition he performed the monumental task of reviewing some twenty thousand cases. Of these the principal source—the unpublished court records of the American colonies—was a field largely unexplored. To examine them the author traversed the entire Eastern seaboard from Wiscasset, Maine, and Woodsville, New Hampshire to St. Augustine, Florida.

The work covers, in scope, the entire field of wages and conditions of free labor, and of conditions of bound labor during the 17th and 18th centuries. The introductory chapter sets American labor relations in their mercantilist background. The forms of restraint applying to workers and to masters which were embodied in the mercantilist statutes of 17th century England—particularly the Statute of Artificers and the Poor Law—were transplanted to the new country, and, with some regional variations, became the pattern of statutes and court decisions in the colonies. Part I, which consists of six chapters, deals with the regulation of wages of free labor before and during the Revolution, concerted action among free workers, the terms and conditions of employment of free workers, maritime labor relations, and labor and the armed services. Part II, dealing with bound labor, has a chapter on the nature of such labor, one on its sources,

and one on the legal status of servitude. A concluding chapter discusses persistent problems of labor relations in the light of early American experience.

This study takes on added significance because the author has stressed important parallels between the experience of government with labor in the first two centuries of American history and current patterns. He avoids the pitfalls into which a less experienced scholar might fall by refraining from pushing the analogies farther than is warranted. In fact, Professor Morris emphasizes the marked economic differences and the broad gaps in social and political structure and concepts that separate the centuries. However, he reminds us that such persistent contemporary labor problems as wage-, and price-fixing, economic stabilization, the right of workers to take concerted action, absenteeism, enticement of workers and dismissals constitute the core of the master-servant relations that were supervised by colonial and Revolutionary governments.

The institution of bound labor presents not a parallel but rather a sharp contrast to those of the present American scene. Settlement of the new country with its seemingly inexhaustible resources came in a period when commercial and industrial enterprise was the driving power for territorial expansion. A hungry international market made feasible commercial agriculture, the rapid growth of seaports, and even industrial undertakings. But those developments were dependent upon an adequate *and sure* labor force. Since native labor was out of the question, the necessary manpower had to be drawn from Europe. Fortunately for this purpose, there were surplus populations in England and on the continent, whose livelihood was so precarious as to make migration to a more favorable labor market extremely inviting. Of course, for those more substantial workers with savings the shift to the new world was merely a matter of pulling up roots and purchasing passage. But for the penniless, a response to improved wages and living standards could not be so demonstrated, since an ocean comparatively costly to span lay between his destitute self and the potential job.

When economic incentives are powerful, a problem such as this will find a solution within the contemporary institutional framework. Today an acceptable means of fostering migration would doubtless be spelled out in terms of governmental subsidies or loans. In the colonial period, the voluntary act of an adult white laborer in binding himself to a master for a term of years solved the problem of transportation, since an agent or ship captain could sell the contract when the ship arrived in an American port. When the American master purchased the contract, the immigrant had a job. But this was not a job which he was free to leave. Since complete subordination to the master during the period of service was deemed essential to assure fulfillment of the contract, the master had fairly complete control over the person of the bound worker, whose freedom was severely restricted.

In so far as the agent profited from the sale or the master resold his servant's unexpired time to advantage, it would not appear to have been the

laborer who stood to gain from having shifted to a market where labor was scarce and highly valued. Furthermore, during his period of service the servant frequently had to live on a level of bare subsistence, which he could scarcely have regarded as an improvement. However, a full-employment economy promised future security and opportunity when the servile period ended. The ambitious servant could look forward to a freehold, or an independent shop, or comparatively well-paid employment. Little class stigma attached to a freedman owing to previous servitude, and such workers were rapidly assimilated, for the perpetuation of sharp caste differences was impossible in a country possessing abundant and cheap lands.

Not all bound workers voluntarily entered that state. Transported convicts (estimated at 50,000), colonial convicts, persons put in servitude for debt, and apprenticed pauper children were also a part of the indentured servant class. The author estimates that nearly half of the total white immigration to the thirteen colonies came as bound labor. Apparently contemporaries never assumed that the work in the colonies could be done except by forced labor, for not enough freemen would voluntarily migrate, and those who did would find an independent proprietorship too easy to establish for them to be held long as wage workers.

Although, as the author points out, bound labor evolved out of the circumstances of colonial emigration and along quite original lines, it had some roots in the complex of economic theories and practices known as mercantilism, which sanctioned even for free labor controls over choice of vocation and terms of work, and which advocated the compulsory labor of the poor. The system of indentured labor also stemmed in part from the English system of poor relief, under which poor children were bound out, and settlement laws restrained the free movement of workers. Thus, while unique, indentured servitude had a closer kinship with the contemporary system of free labor, one might say, than with the system of chattel slavery.

ELINOR PANCOAST

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Trade Union Publications: the Official Journals, Convention Proceedings, and Constitutions of International Unions and Federations, 1850–1941. By LLOYD G. REYNOLDS and CHARLES C. KILLINGSWORTH. Vol. I, Description and Bibliography. Vols. II and III, Subject Index. (Baltimore: Johns Hopkins Univ. Press. 1944; 1945; 1945. Pp. xxxii, 416; lvii, 486; xv, 445. $25.00.)

Inductive economics greatly depends on those truly philanthropic souls in the gild who are willing to toil long years in making available to others the requisite building materials with which to realize their architectural dreams. In the philanthropic achievement before us, so splendidly performed by Reynolds and Killingsworth, sheer industry, while indispensable when one undertakes to index every item above 500 words, was the least of the required qualifications. What was needed was, first, an indomitable courage in tackling a job, which, if it cannot be described as titanic as

bailing out the ocean, may at least be likened to extracting all the minerals from the Dead Sea. But, above all, what the authors needed was a clear understanding of unionism as a going institution—the "going government" within each organization, the systems of ethical values, and a theory of labor in industry—and a grasp of the meaning of "industrial government," of the union jointly with the employers, in crystallization and in action. With these volumes at his elbow the student of labor will no longer be compelled to confine himself to the study of one union, as "life is short," but will be able to tackle with a good opportunity for thoroughness union usages and methods which are common to many unions. The field for inductive study has thus been immeasurably widened, in addition to being fructified by the use of the comparative method. It is no less than this that we shall all of us from now on owe to these two highly discriminating and philanthropic workers in our fellowship.

But not the least merit of this work is found in an analytical discussion of the uses to which such materials as they have indexed can be put—productive generalizations on union government, beliefs and theories, tactics, unionism's economic and political effects. This discussion appears in the first and introductory volume, the remainder of that volume being given to most useful brief histories and critiques of publications of some fifty unions together with brief chronological summaries for the others. Students will especially appreciate the enumeration of the periods during which particular union publications were ably edited and therefore contain "pay dirt."

It is interesting that the authors conclude that "the material thus appears to support the thesis that a mature trade union concentrates on enlarging and controlling the job opportunities available to its members rather than on broad projects of political and social reform" (Vol. I, pp. 21–22). With such a conclusion this reviewer will, naturally, not quarrel. Yet he will add that in periods when the general politico-economic topography is undergoing rapid change—as when government has moved into the centre of the economic arena thus becoming among other things a purveyor of jobs if the need arises—then the very job consciousness of the mature unions tends to force them to become concerned with this important hinterland of their job opportunities. A good example is offered by the railroad brotherhoods which, notwithstanding their "conservatism," were the pioneers among labor unions in organizing powerful lobbies, because in their industry government was no longer a remote matter but the arbiter of important issues.

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NOTES

FIFTY-NINTH ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION

Atlantic City, N. J.—January 23 to 26, 1947

Preliminary Announcement of Program

Thursday, January 23

1. MEETING OF THE EXECUTIVE COMMITTEE (10:00 A.M.)

2. THE EMPLOYMENT ACT OF 1946 AND A SYSTEM OF NATIONAL BOOKKEEPING (8:00 P.M.)
   Chairman: T. O. Yntema, University of Chicago
   "The Council of Economic Advisers: The Lines of Approach," E. G. Nourse, Council of Economic Advisers to the President
   "Tracing Money Flows through the United States Economy," M. A. Copeland, National Bureau of Economic Research
   Discussion: To be announced

Friday, January 24

3. PUBLIC DEBT: HISTORY (10:00 A.M.)
   Chairman: To be announced
   "The Origin and Growth of National Debt in Western Europe," E. J. Hamilton, Northwestern University
   "History of Public Debt in the United States," B. U. Ratchford, Duke University
   "History of Public Debt in Latin America," F. W. Fetter, Haverford College
   Discussion: To be announced

4. THE CHANGING CHARACTER OF MONEY (10:00 A.M.)
   Chairman: Howard S. Ellis, University of California
   "Who Holds Money and Why?" John K. Langum, Federal Reserve Bank of Chicago
   "What Rights Should the Holder of Money Have?" Karl H. Niebyl, Black Mountain College
   "Money as Pure Commodity," Benjamin Graham, New York, N.Y.
   "Money as *Numeraire*," Walter Egle, Ohio State University
   "Money as a Creature of the State," Abba P. Lerner, New School for Social Research
   "The Relative Liquidity of Money and Other Things," E. C. Simmons, University of Michigan
   "Money in the Russian Economy," Alexander Gerschenkron, Board of Governors, Federal Reserve System
   "The Payment of Interest on Series E Bonds," Earl Rolph, University of California
   "International *versus* Domestic Money," Robert Triffin, International Monetary Fund
   Summary: "The Probable Futurity of Money," Howard S. Ellis, University of California
   Discussion: Open to all

5. THE RÔLE OF SOCIAL SECURITY IN A STABLE PROSPERITY (10:00 A.M.)
   Chairman: Eveline M. Burns, New York School of Social Work, Columbia University
   Title of paper to be announced—Lewis Meriam, Brookings Institution
   Title of paper to be announced—Eliot J. Swan, Federal Reserve Bank of San Francisco
   Discussion: To be announced

6. LUNCHEON MEETING: THE ECONOMIC OUTLOOK (12:30 P.M.)

Chairman: Woodlief Thomas, Board of Governors of the Federal Reserve System
"Forecasting and Planning in the Transition Period," Woodlief Thomas, Board of Governors of Federal Reserve System
"The Outlook for Incomes and Spending," Ragnar Naess, Naess and Cummings
"The Business Outlook," Leonard P. Ayres, Cleveland Trust Company

7. THE PUBLIC DEBT: EFFECTS ON INSTITUTIONS AND INCOME (2:30 P.M.)

Chairman: To be announced
"Public Debt and Income," Aryness Joy Wickens, U. S. Bureau of Labor Statistics
"Public Debt and Institutions," Donald Woodward, Mutual Life Insurance Co. of New York
Discussion: To be announced

8. THE ECONOMY OF THE U.S.S.R. (2:30 P.M.)

Chairman: Jacob Marschak, University of Chicago
"Soviet National Income Estimates—Their Distinguishing Characteristics and Problems," Paul Studenski, New York University
"The Future Expansion of the Soviet Economy," Harry Schwartz, Syracuse University
"The U.S.S.R. in the Proposed International Trade Organization," Alexander Gershenkron, Board of Governors of the Federal Reserve System
Discussion: Abram Bergson, Columbia University
Abba P. Lerner, New School for Social Research
W. W. Leontief, Harvard University

9. DOMESTIC *VERSUS* INTERNATIONAL ECONOMIC EQUILIBRIUM (2:30 P.M.)

Chairman: To be announced
"Full Employment Policies and Multilateral Trade," Arthur Smithies, Bureau of the Budget
"Internal and External Considerations of Monetary Policy," Ragnar Nurkse, Institute for Advanced Study
Discussion: Gottfried Haberler, Harvard University
Howard S. Ellis, University of California
Others to be announced

10. DINNER MEETING (6:30 P.M.)

Chairman: E. A. Goldenweiser, Institute for Advanced Study
"Some Cleavage among Economists," J. M. Clark, Columbia University
"The Outlook for the United Kingdom," Henry Clay, Oxford University

11. THE SOCIAL AND ECONOMIC SIGNIFICANCE OF ATOMIC ENERGY (8:00 P.M.)

Chairman: W. W. Riefler, Institute for Advanced Study
"Vulnerability of Countries to Atomic Bomb Attack," Ansley Coale, Social Science Research Council
"Potentialities of Atomic Energy as a Source of Power," Speaker to be announced
Discussion: Louis Dembitz, Board of Governors of the Federal Reserve System

12. PRICES: THE WARTIME HERITAGE AND SOME PRESENT PROBLEMS (8:00 P.M.)

Chairman: Frederick C. Mills, Columbia University
"Price Control: a Review and Appraisal," J. K. Galbraith, Fortune Magazine
"Wage-Price Relationships," John T. Dunlop, Harvard University
Discussion: Corwin D. Edwards, Northwestern University
Melvin G. de Chazeau, Committee for Economic Development
Elmer J. Working, University of Illinois

13. BANKING PROBLEMS (8:00 P.M.)

Chairman: To be announced

"The Management of Commercial Bank Holdings of Treasury Securities," Charles C. Abbott, Harvard University
"Principles of Banking Reform," Harold L. Reed, Cornell University
Discussion: H. H. Preston, University of Washington
Emile Despres, Williams College
William R. White, Guaranty Trust Company, New York
Others to be announced

Saturday, January 25

14. PUBLIC DEBT: MONETARY ASPECTS (10:00 A.M.): Session to be arranged

15. LABOR PRODUCTIVITY (10:00 A.M.)
Carter Goodrich, Columbia University
Julius Hirsch, New York City
Others to be announced

16. ROUND TABLE ON UNDERGRADUATE TEACHING OF ECONOMICS (10:00 A.M.)
Report of Committee by Horace Taylor, Columbia University
Other participants to be announced

17. LUNCHEON MEETING (12:30 P.M.): Speakers and subject to be announced

18. VITAL PROBLEMS IN LABOR ECONOMICS: APPROACHES AND AREAS FOR RESEARCH (2:30 P.M.)
Chairman: J. Douglas Brown, Princeton University
"Wages," Charles A. Myers, Massachusetts Institute of Technology
"Labor-Management Relations," Frederick H. Harbison, University of Chicago

19. RAILROADS AND PUBLIC UTILITIES (2:30 P.M.)
To be announced

20. ROUND TABLE ON THE PROPOSED REVIEW OF ECONOMICS PROJECT (2:30 P.M.)
Chairman: A. B. Wolfe, Ohio State University
Others to be announced

21. ANNUAL BUSINESS MEETING (5:00 P.M.)

22. PRESIDENTIAL ADDRESS (8:00 P.M.)
Chairman: To be announced
Speaker: E. A. Goldenweiser, American Economic Association

Sunday, January 26

23. MEETING OF THE EXECUTIVE COMMITTEE (9:00 A.M.)

24. HOUSING PROBLEMS (10:00 A.M.)
Chairman: William A. Berridge, Metropolitan Life Insurance Company
"Observations on the Provision and Use of Housing Census Data," Howard G. Brunsman, Bureau of the Census, Department of Commerce
"Objectives and Accomplishments of the Veterans' Emergency Housing Program of 1946," Coleman Woodbury, University of Wisconsin
Discussion: Richard U. Ratcliff, University of Wisconsin
J. Bion Philipson, National Housing Agency
Arthur M. Weimer, Indiana University
Miles L. Colean, Washington

25. ROUND TABLE ON ECONOMIC RESEARCH (10:00 A.M.)
Chairman: Simeon E. Leland, Northwestern University
Papers to be announced

26. ECONOMIC FORECASTS (10:00 A.M.)
    Frank Garfield, Board of Governors of the Federal Reserve System
    Others to be announced

The following persons have recently become members of the AMERICAN ECONOMIC ASSOCIATION:

Addington, H. E., 3900 Hamilton Ave., Apt. C-204, Hyattsville, Md.
Afros, J. L., 172 Mississippi Ave., S.E., Washington 20, D.C.
Alivia, G., via Cagliari 2, Sassari, Sardinia, Italy
Anderson, D. A., School of Commerce, Room 432, Washington Square, New York 3, N.Y.
Arrington, L. J., Utah State Agricultural College, Logan, Utah
Babcock, Miss C. J., 1560 Ansel Road, Cleveland 6, Ohio
Badri Rao, S. R. N., 56 Wendell St., Cambridge, Mass.
Baker, J. A., 3030 S. Buchanan St., Arlington, Va.
Barone, S. V., 431 Brandywine St., S.E., Washington, D.C.
Black, D. M., Graduate House, Massachusetts Institute of Technology, Cambridge 39, Mass.
Blake, A., 3200–19th St., N.W., Washington, D.C.
Blitman, S., 4041 Tax Res., U. S. Treasury, Washington 25, D.C.
Bowles, C., Hayden's Point, Essex, Conn.
Bowman, Miss J. C., 640 Mason St., San Francisco 2, Calif.
Bowman, R. T., 5109 Township Line Road, Drexel Hill, Pa.
Boyd, R. L., University of Illinois, 414 Kinley Hall, Urbana, Ill.
Break, G. F., 119 South Hall, University of California, Berkeley, Calif.
Browne, J. H., No. 75333227, Royal Army Medical Corps, 52 Indian General Hospital (C), Rangoon, Burma
Buttrick, J. A., 2726 Yale Station, New Haven, Conn.
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David, C. W., University of Pennsylvania Library, Philadelphia 4, Pa.
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Dekock, J., 4866 Cote des Neiges Road, Montreal, Quebec, Canada
Denison, Mrs. D. C., 1125 Lincoln Dr., Grand Forks, N.D.
Derrick, S. M., Dept. of Economics, University of South Carolina, Columbia, S.C.
Diamond, H. M., College of Bus. Admin., Lehigh University, Bethlehem, Pa.
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Halterman, J. F., University of California, Santa Barbara, Calif.

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Kaplan, L., 1631 Fort Davis St., S.E., Washington 20, D.C.
Kaplan, M., 3445-38th St., N.W., Washington, D.C.
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Lichtash, B. S., 5300-65th Place, Maspeth, L.I., N.Y.
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Magee, R. H., Standard Register Co., Dayton 1, Ohio
Marcus, H. G., 401 Broadway, New York 13, N.Y.
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Mayne, A., 76 Brighton Ave., Bloomfield, N.J.
McNeill, J. W., 20528 Morewood Parkway, Rocky River 16, Ohio
McRaith, J. F., 209 University Hall, Iowa City, Iowa
McVay, F. E., North Carolina State College, Raleigh, N.C.
Miller, A. E., Time, Inc., 9 Rockefeller Plaza, New York 20, N.Y.
Miller, E., 1132 S. 60th St., Philadelphia 43, Pa.
Morgenstein, S. A., 1860 Forest Hills Blvd., East Cleveland, Ohio
Myers, D. B., 2120-16th St., N.W., Washington 9, D.C.
Olsen, A. B., College of Business Administration, University of Denver, 211-15th St., Denver 2, Colo.
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Paternot, P. S., 33 W. Kyrke St., Chevy Chase, Md.
Peereboom, O., 2429 Chain Bridge Road, N.W., Washington, D.C.
Persons, R. H., Jr., 1807 Rio Grande, Austin 21, Tex.
Petshek, K. R., 14 Centre St., Cambridge, Mass.
Pitkin, W. A., Southern Illinois Normal University, Carbondale, Ill.
Pollis, Miss A., 3205 Guilford Ave., Baltimore 18, Md.
Poole, R. S., 4804 Drummond Ave., Chevy Chase, Md.
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Reedy, J. H., Jr., 185 Church St., Middletown, Conn.
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Saunders, R. S., 2379 Madison Road, Cincinnati 8, Ohio
Schechter, H. B., 2851 Denver St., S.E., Washington 20, D.C.
Schenk, W. E., 806 S. 3rd St., Champaign, Ill.
Schloss, H. H., 5102 Walker Ave., Lincoln 4, Neb.
Schwartz, H., 113 Ramsey Ave., Syracuse 3, N.Y.
de Schweinitz, K., Jr., 78 Lake Place, New Haven A-11, Conn.
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Smith, B. J., 3600 Beverly Drive, Dallas 5, Tex.
Smith, G. R., 1411 West Wood St., Decatur, Ill.
Speagle, R. E., 200 S. New Hampshire Ave., Los Angeles 4, Calif.
Spencer, Miss M. W., 6642 Minerva Ave., Chicago 37, Ill.

Templeton, J. M., 30 Rockefeller Plaza, New York 20, N.Y.
Thurston, H. M., Interlaken, North Muskegon, Mich.
Tilove, R., 1906 Wightman St., Pittsburgh 17, Pa.
Underhill, H. F., Extension Division, Indiana University, 122 E. Michigan St., Indianapolis, Ind.
Wai, U. T., c/o M. S. Min, Garlands, Harrow, Harrow on the Hill, Middlesex, England
Wark, R., c/o Banner Cross Hall, Sheffield 11, England
Wilmington, M. M., 306 Third Ave., New York, N.Y.
Winston, C., 1420 Tuckerman St., N.W., Washington 11, D.C.
Yakel, R., Jr., Evansville College, Evansville, Ind.
Yorkin, Miss M, J., George Washington Hotel, Washington, Pa.
Young, J. C., 614 N. Nevada Ave., Colorado Springs, Colo.

Herbert E. Mills, professor of economics at Vassar College for many years, died at his home in Poughkeepsie on March 9, 1946.

Dr. Maurice Henry Robinson, professor of economcs, emeritus, at the University of Illinois, died very suddenly the 28th of February, 1946, at Pine Orchard, Conn.

Appointments and Resignations

Gardner Ackley has returned to the University of Michigan as assistant professor of economics.

Walter Adams has joined the staff of the department of economics at the University of Illinois as an instructor.

King Adamson has been appointed assistant professor of economics at Wayne University.

Ray Albright has been appointed instructor in economics at Purdue University.

Sidney S. Alexander has accepted an appointment as assistant professor in the department of economics of Harvard University.

Rendel B. Alldredge has been appointed acting instructor in economics at Stanford University.

William H. Anderson, formerly of the University of Wisconsin, is now associate professor of economics at the University of Southern California.

Paul Arnolds-Patron has resigned from Texas Technological College and has joined the staff of Centre College as associate professor of economics and sociology.

Robert L. Aronson is a part-time assistant in economics at Princeton University.

Karl E. Ashburn, formerly economist with the War Assets Administration, is now associate professor of economics at the University of Florida.

Jules Backman has been promoted from the rank of assistant professor to that of associate professor in the department of economics of the School of Commerce of New York University.

Richard W. Ballantine is a part-time assistant in economics in Princeton University.

Robert Bartels, formerly of the University of Washington and of the University of California, has become an associate professor of marketing at the Ohio State University.

Robert Beattie has joined the staff of the School of Business Administration at the University of Minnesota as an instructor.

A. P. Becker has been appointed assistant professor in the department of economics at Ohio State University.

D. M. Beights has resigned as professor of accounting at the University of Florida.

Konrad Bekker, formerly of the University of Kentucky, is now research analyst in the Department of State.

Philip K. Bergner, who has been deputy collector of internal revenue at Wheeling, has been appointed assistant professor of accounting at Washington and Jefferson College.

Julio N. Berrettoni has rejoined the faculty of the School of Business Administration at the University of Minnesota as assistant professor of economics.

Joseph J. Biery has been appointed associate professor of accounting at the University of Kansas.

George E. Bigge, a member of the Social Security Board, recently returned from Germany where he served with the American Military Government, is offering a course in social security in the Graduate School of Social Science, the Catholic University of America.

Edward Birnberg is an instructor in the School of Business Administration at the University of Minnesota.

Henry Bittermann has resigned his position as professor of economics at Ohio State University to continue his work in the Division of Monetary Research in the Treasury Department.

Julian R. Black has been appointed instructor in accounting at Duke University.

Raymond F. Blackburn has been promoted from associate professor to professor of statistics in the School of Business Administration of the University of Pittsburgh.

Forrest C. Blood, Jr., has been appointed part-time assistant in the department of economics of the College of Business Administration at the University of Nebraska.

Floyd A. Bond has resigned from the University of Michigan to accept a position at Carleton College as associate professor of economics.

Sidney Borden has been appointed junior assistant in the department of economics, School of Commerce, New York University.

Nathan Borofsky is a junior assistant in the department of economics, School of Commerce, New York University.

Richard M. Bourne, formerly regional Office of Price Administration economist for Wyoming, is now attached to the staff of the College of Business Administration of the University of Nebraska as instructor in economics.

Walter A. Bowers is serving as lecturer on transportation and research associate at the University of Kansas.

Beverly Bowman has been appointed assistant professor of business administration at Clark University.

Charles Bradley is serving as a part-time assistant in the department of economics at the University of Illinois.

Harry G. Brainard, formerly economist with the Office of Price Administration and more recently on special assignment with the Army in Japan, is now associate professor of economics at Michigan State College.

Merwyn G. Bridenstine, who served as Major in the Army Air Forces during the war, was appointed assistant dean in the College of Business Administration at Butler University in January, 1946.

Royal J. Briggs has accepted the chairmanship of the social studies and business division at Central Missouri State College and is also serving as professor of economics.

Stuart R. Briggs has been appointed assistant professor of accounting at Claremont College School for Men.

Paul L. Brown, recently of the University of North Carolina, has been appointed assistant professor of marketing at the Ohio State University.

Leslie A. Bryan is now serving as professor of business operation and organization and also as director of the Institute of Aeronautics at the University of Illinois.

Emory P. Burnett has been appointed part-time assistant in the department of economics of the College of Business Administration at the University of Nebraska.

Judson O. Burnett, formerly professor of accounting and economics at Northern Montana College, has accepted a position as assistant professor of accounting in the College of Business Administration of the University of Nebraska.

Donald Burns is assistant professor of accounting at the University of Florida.

M. H. Butler has been appointed part-time assistant in the department of economics at the University of Illinois.

Carl Cabe is a part-time assistant in the department of economics at the University of Illinois.

J. D. Calderwood has been promoted to assistant professor of economics at Ohio State University.

John E. Candalet, formerly associate professor of economics at Rhode Island State College and during the war a Lieutenant Commander in the Navy, is assistant professor of economics and also counsellor of students at Trinity College.

David Cartwright has joined the staff at the University of Minnesota as an instructor.

Ethel Chase has accepted an appointment as assistant in the department of economics at the University of Illinois.

Willard Cheley, formerly of Louisiana State University, has been appointed instructor in economics at Lafayette College.

John Chisholm, of the University of Alabama, is instructor in economics in the College of Commerce of Louisiana State University.

Aaron H. Chute has resigned from the University of Minnesota to become professor of marketing and head of the marketing division at the University of Toledo.

John D. Clark has resigned as dean of the College of Business Administration of the University of Nebraska to accept an appointment as one of the three members of President Truman's Council of Economic Advisers, in Washington, D.C.

Edwin C. Clarke has been appointed assistant professor of economics in the School of Business Administration of the University of Pittsburgh.

T. C. Cobb has accepted a part-time assistantship in the department of economics at the University of Illinois.

Philip Coldwell has been appointed part-time assistant in the department of economics at the University of Illinois.

Virgil Conkling is a part-time instructor in accounting at the University of Florida.

A. E. Coons has been appointed assistant professor in the department of economics at Ohio State University.

E. Theodore Couch has been appointed assistant professor of accounting at the University of Florida.

Virgil D. Cover, until recently a Lieutenant in the Navy, has accepted a position as associate professor of transportation at Syracuse University.

T. Hillard Cox has been appointed professor of management at Louisiana State University.

V. C. Crisafulli is assistant professor of economics and head of the department of economics at the branch college of Syracuse University in Utica, N.Y.

Mervyn Crobaugh has resigned as associate professor of economics at Washington and Lee University to continue his work with the Office of Price Administration in Cleveland.

Earl C. Crockett, professor of economics at the University of Colorado, has been given a leave of absence during the fall term to conduct a tax survey of the state of Colorado.

Maude Cuenod, of West Texas State Teachers College, is instructor in business correspondence at Louisiana State University.

Kenneth J. Curran has resumed his duties as assistant professor of economics after three years' war service with the Allied Military Government in Italy as Lieutenant Colonel.

Roy E. Curtis has resigned as professor of economics at the University of Missouri to continue his work with the Transportation Division of Office of Price Administration.

Lawrence A. Cusack, formerly head of the department of economics at Creighton University and now connected with the U. S. Internal Revenue Bureau, is giving a course in advanced accounting theory in the Graduate School of Social Science of the Catholic University of America.

Howard A. Cutler has resigned as instructor in economics at the State University of Iowa to accept a position with the Irving Trust Company in New York City

Ernest Dale is serving as lecturer in labor relations in the School of Business of Columbia University during the current academic year.

George Dandelake has been appointed part-time instructor in accounting at the University of Florida.

Carl A. Dauten is associated with the School of Business and Public Administration at Washington University as associate professor of commerce and finance.

Gilbert C. Davis, Jr., has been appointed a part-time assistant in economics in Princeton University.

Smith Davis has been appointed a part-time assistant in the department of economics of the College of Business Administration of the University of Nebraska.

C. C. Dawson is head of the department of commerce and business administration at Mississippi Southern College.

Robert G. Deupree, recently with the Office of Price Administration in Washington, has been appointed associate professor of business administration at the University of Tennessee.

Ralph L. Dewey has been appointed professor of economics and assistant dean of the Graduate School at Ohio State University.

Frank G. Dickinson, associate professor of economics at the University of Illinois, has been granted a leave of absence to accept the position of director of the Bureau of Medical Economics for the American Medical Association.

Karl F. Diessner is serving as a lecturer in business law at Minnesota.

Arthur T. Dietz has been appointed a part-time assistant in economics in Princeton University.

James Dingwall was appointed associate professor in the College of Business Administration at Butler University in September, 1946.

Richard W. Dittmer, economist and project director in Opinion Research Corporation, is serving as part-time lecturer in economics in Princeton University.

Wenzil K. Dolva is professor of retailing at the School of Business and Public Administration of Washington University.

Elvin F. Donaldson has been promoted to the rank of professor of finance at the Ohio State University.

William L. Doremus, recently discharged from the Army, where he served as chief statistician in the Office of the Quartermaster General and as instructor at the Biarritz Army University Center, has rejoined the faculty of New York University School of Commerce as assistant professor of marketing.

Lawrence S. Dreiman has left the University of Minnesota to join the staff of the finance division of the military government in Vienna.

Delbert J. Duncan, formerly at Northwestern University, is professor of marketing in the School of Business and Public Administration of Cornell University.

Stahrl W. Edmunds has been appointed lecturer in economics at the University of Minnesota.

E. O. Edwards is an assistant in accounting at Washington and Jefferson College.

Paul W. Ellis, formerly of Bethany College, has accepted a position as associate professor of economics at the University of Oregon.

Alfred Essock was appointed assistant professor in the College of Business Administration at Butler University in September, 1946.

M. Rhett Everhart, formerly Lieutenant in the Navy, is now instructor in accounting in the School of Business Administration, University of Tennessee.

Solomon Fabricant has been appointed lecturer in American economic history in the department of economics of the School of Commerce of New York University.

George Fair has resumed his teaching as instructor in accounting at Louisiana State University after four years' service in the Army.

Frank W. Fetter, chairman of the department of economics at Haverford College, returned in September, 1946, after spending three and one-half years with the Office of Lend-Lease

Administration and the Department of State. During his last year with the Department of State he was chief of the Division of Investment and Economic Development.

Paul Fisher, of Clark University, is now associated with Dartmouth College.

Dwight P. Flanders has been appointed assistant professsor of economics at the University of Illinois.

Michael T. Florinsky has been appointed lecturer in European economic history in the department of economics, School of Commerce, at New York University.

I. S. Fosnaugh has joined the staff of the department of economics at the University of Illinois as an assistant.

Herbert W. Fraser has been appointed a part-time assistant in economics in Princeton University.

C. W. Fristoe is a part-time assistant in the department of economics at the University of Illinois.

Earl S. Fullbrook, who returned as professor of marketing in February, 1946, from leave of absence as executive manager of the Lincoln Chamber of Commerce, has been appointed dean of the College of Business Administration of the University of Nebraska.

J. Herbert Furth, of the Board of Governors of the Federal Reserve System, will offer two courses in the Graduate School of Social Science, the Catholic University of America, during the academic year 1946–47.

Walter Galenson has been appointed an annual instructor in the department of economics of Harvard University.

John S. Gambs, until recently international labor relations advisor in the U. S. Department of Labor, has accepted an appointment as professor of economics at Hamilton College.

Roy L. Garis, formerly of Vanderbilt University, is now professor of economics at the University of Southern California.

J. Kenneth Gerdel is assistant professor of personnel in the School of Business and Public Administration of Washington University.

George Gibbs, Jr., has become economist with the National Theatres Corporation in Los Angeles, after serving as Lieutenant Commander on active duty with the Navy in the Pacific theatre.

Harold Gold is serving as lecturer in the School of Business Administration at the University of Minnesota.

Richard M. Goodwin has accepted an appointment as assistant professor in the department of economics of Harvard University.

Wytze Gorter is an acting instructor in economics at Stanford University.

Russell Grady has been appointed associate professor of accounting at the University of Florida.

H. D. Graham has been appointed part-time assistant in the department of economics at the University of Illinois.

William D. Grampp, formerly of De Paul University, has accepted an appointment as assistant professor at Syracuse University.

Edith Green has resigned from the Social Security Board in Washington to become an instructor in economics at Denison University.

E. Claibrook Griffith has been appointed associate professor of economics at Washington and Lee University.

Gertrude Grodski is attached to the department of economics at the University of Illinois as a part-time assistant.

Earl C. Hald, until recently regional economist for the Office of Price Administration in San Francisco, has been appointed assistant professor of economics at the University of Washington.

Charles E. Hales, formerly chairman of the division of social studies at Colorado State College of Education, has been appointed associate professor of economics in the School of Business Administration, University of Tennessee.

Challis C. Hall, Jr., has been appointed an annual instructor in the department of economics of Harvard University.

Franklin P. Hall has been appointed associate professor of economics and sociology at Clark University.

Morrison Handsaker, formerly at Occidental College and at the University of California at Los Angeles, has been appointed chairman of the economics department at Lafayette College.

Evan B. Hannay has been appointed a part-time assistant in economics in Princeton University.

Rector R. Hardin resigned as chairman of the department of economics and business at Berea College in July to accept the position of professor of business and economic history in the College of Business Administration of the University of Arkansas.

Charles O. Hardy has left the Federal Reserve Bank of Kansas City to become economist with the Chicago Association of Commerce.

H. Gordon Hayes, professor of economics at the Ohio State University, was a member of the summer session staff at the University of Wisconsin.

Earl O. Heady has been promoted to the position of associate professor of agricultural economics at Iowa State College.

Theodore C. Helmreich is assistant professor of economics at Purdue University.

Leo Herbert has resigned as assistant professor of accounting at Louisiana State University to accept a position at Brigham Young University.

William H. Hickman has been appointed acting instructor in economics at Stanford University.

William J. Hill, Lieutenant Commander of the Navy attached to the department of naval science and tactics at the University of Minnesota, is also serving as an instructor in economics.

Byron Hilley is an instructor in business law at the School of Business Administration, Emory University.

Randall Hinshaw is now an assistant professor of economics at Amherst College.

Howard L. Hoag has been appointed instructor in economics at Purdue University.

J. E. Hodges has accepted a position as assistant professor of economics at the Rice Institute and is also serving as economist to the Hughes Tool Company.

Harold J. Hoflich, formerly United States Treasury representative in Manila, P.I., has been appointed lecturer in economics for the academic year 1946–47 at the University of California, Berkeley.

Edgar M. Hoover has been promoted to the rank of professor of economics at the University of Michigan.

Mary Hudson, of the University of Pennsylvania, has accepted an appointment as instructor in economics at the College of William and Mary.

Thomas N. Humble has been appointed assistant professor of accounting at the University of Florida.

Charles Hyson has been appointed an annual instructor in the department of economics of Harvard University.

Asher Isaacs has been promoted from associate professor to professor of economics in the School of Business Administration of the University of Pittsburgh.

Stanley F. Jablonski has been promoted from assistant professor to associate professor of accounting in the School of Business Administration of the University of Pittsburgh.

Nathaniel Jackendoff is a part-time assistant in the department of economics at the University of Illinois.

Arthur D. Jacobsen has resigned as associate professor of economics and business administration at the University of Redlands to become chairman of the School of Business and Economics of Eastern New Mexico College.

E. A. J. Johnson, of the department of economics, School of Commerce, New York Univer-

sity, is on leave of absence for the year 1946–47 to serve as Secretary of Commerce in the National Government of Korea.

Kenneth Johnson has been promoted to acting assistant professor of economics at Stanford University.

R. C. Journey, who was formerly engaged in government economic and statistical investigations and who taught courses in economics during the 1946 summer session at Xavier University, has been appointed assistant professor of economics at Washington and Jefferson College.

M. J. Jucius has been appointed professor of industrial management and personnel at the Ohio State University.

Jacob R. Karp has been appointed a part-time assistant in economics in Princeton University.

F. E. Keller has resigned from the staff of West Virginia University to accept a position with the United States Chamber of Commerce.

James W. Kelley, formerly of the U. S. Department of Labor, has joined the staff of the College of Business Administration at Boston University.

Ralph Kelmon has been appointed assistant professor of accounting at the University of Florida.

Charles J. Kennedy, formerly professor of history and chairman of the department of social science at Iowa Wesleyan College, has accepted an appointment as assistant professor of economics in the College of Business Administration of the University of Nebraska.

Marshall D. Ketchum is associate professor of finance in the School of Business of the University of Chicago.

Charles C. Killingsworth, formerly of Johns Hopkins University and of the Social Security Administration, has been appointed associate professor of economics at Michigan State College in the field of industrial relations.

Eugene Kindler has been appointed instructor in the School of Business Administration at the University of Minnesota.

Willys R. Knight, formerly at the University of Maryland, is now an instructor in economics at Michigan State College.

Leslie A. Koempel has been appointed assistant professor of sociology at Vassar.

Paul B. Kohberger is instructor in economics and also assistant to the dean of the School of Business Administration at the University of Pittsburgh.

Paul Kohler has been appointed assistant professor of economics in the department of economics and sociology at the University of Wyoming.

Clifton H. Kreps, Jr., has been appointed instructor in economics at Pomona College.

Juanita M. Kreps has resigned as instructor in economics at Denison University to continue her graduate study at Duke University.

Milo Kimball, formerly at Ohio State University, is now associate professor of economics at Rhode Island State College.

Herman E. Krooss is a senior assistant in the department of economics, School of Commerce, New York University.

E. R. Kuchel has joined the staff of the department of economics and sociology at the University of Wyoming as an instructor in economics.

Kenneth K. Kurihara has been appointed instructor in economics in Princeton University.

Ernest Kurnow has been appointed a junior assistant in the department of economics, School of Commerce, New York University.

Earl R. Larson has returned to the staff of the School of Business Administration at the University of Minnesota as a lecturer in business law.

Maurice C. Latta, formerly head of the department of economics of Doane College, has been appointed assistant professor of economics in the College of Business Administration of the University of Nebraska.

Robert M. Leeds has been appointed part-time instructor in economics and business at the University of Missouri for the current academic year.

Berne C. Lemke has been promoted to the position of associate professor of accounting at Iowa State College.

William S. Lennon has resigned from the staff of West Virginia University to become instructor in economics at Washington and Jefferson College.

George E. Lent has accepted an appointment as acting associate professor of economics at the University of North Carolina.

Marvin Levine has been appointed a senior assistant in the department of economics, School of Commerce, New York University.

J. Wayne Ley has been promoted to professor of business organization and has also assumed the duties of assistant dean of the College of Commerce and Administration at Ohio State University.

R. E. Liming has joined the staff of the department of economics at Ohio State University as an instructor.

Richard Lindholm has been promoted to assistant professor of economics at Ohio State University.

Leonard E. Lindquist has been appointed lecturer in business law at the University of Minnesota.

Michael F. Lindsay is visiting lecturer in the department of economics and the Committee on International and Regional Studies of Harvard University and is assisting in the regional studies course on China.

Milton Lipton has been appointed acting instructor in economics at Stanford University.

C. L. Littlefield, instructor in business administration at Louisiana State University, has resigned to accept a position at Ohio State University.

Shaw Livermore, formerly associated with Dun and Bradstreet, is professor of business economics in the School of Business and Public Administration at Cornell University.

Meno Lovenstein has been appointed assistant professor in the department of economics at Ohio State University.

Richard Lundquist, of the University of Minnesota, was awarded the gold medal of the Illinois State Society of Certified Public Accountants for receiving the highest score in the state in the spring examinations.

David Lusher has been appointed acting associate professor of economics at Stanford.

Arthur Lynn is instructor in the department of economics at Ohio State University.

George Malanos, who has resigned as instructor at the University of Minnesota, is at present at his home in Athens, Greece.

A. Manes will be visiting professor at the University School of Business (Handels-Hochschule), St. Gallen, Switzerland, while on sabbatical leave from Indiana University during the current academic year.

Arthur W. Mason, Jr., has been appointed a part-time assistant in the department of business organization and management of the College of Business Administration, University of Nebraska.

Joe L. Massie, who served as Captain in the Army during the war, has been appointed instructor in economics at the University of Kentucky.

John W. May, who has been assistant professor of economics at the Pennsylvania College for Women and who taught courses in economics during the 1946 summer session at the University of Pittsburgh, has been appointed assistant professor of economics at Washington and Jefferson College.

G. R. Mayhill has been promoted to the rank of assistant professor of economics at Purdue University.

James D. McAllister is associated with Washington and Jefferson College as instructor in accounting.

G. W. McKinley has been appointed instructor in the department of economics at Ohio State University.

Frederick E. Melder has resigned as associate professor of economics and business administration at Clark University and has accepted an appointment as associate professor of economics at Reed College.

Justine Mendelsohn, associate professor of accounting, has retired after twenty-six years of service at Louisiana State University.

Allen L. Meyer is the newly appointed secretary of the College of Commerce and Administration of the Ohio State University.

Robert Miner has returned from military service to become an instructor in marketing at the Ohio State University.

Carey P. Modlin, Jr., has been appointed a part-time assistant in economics in Princeton University.

Sanford A. Mosk has been promoted from assistant professor to associate professor of economics at the University of California, Berkeley. As a holder of a Guggenheim fellowship he has been given a sabbatical leave to study in Mexico in 1946–47.

Robert Mossé, formerly of the French Embassy, is now economic affairs officer in the Department of Economic Affairs of the United Nations at Lake Success.

Joseph F. Murphy is serving as instructor in economics and business at the University of Missouri.

Mabel Newcomer, chairman of the department of economics, sociology, and anthropology at Vassar, is on leave for the current academic year to work on the revision of the German tax system in Berlin.

Herbert E. Newman has resigned his position as associate professor of economics at the University of Florida.

Robert F. Newton was appointed assistant professor in the College of Business Administration at Butler University in September, 1946.

Oswald Nielsen has rejoined the faculty of the School of Business Administration at the University of Minnesota as a lecturer.

H. C. Nolen has been promoted to the rank of professor of marketing at the Ohio State University.

John C. Norby, formerly of the University of Washington, has joined the faculty of the School of Business Administration at the University of Minnesota as an instructor.

Ruby T. Norris has returned to Vassar after a four years' leave during which she worked for the Office of Price Administration in Honolulu.

James J. O'Leary is serving as associate professor of economics at Duke University and is also director of research for the Committee on Public Debt Policy in New York City.

Clifton Oliver, Jr., has been appointed instructor in economics at the University of Florida.

Donald Oren has been appointed instructor in economics at the University of Minnesota.

James M. Owen is an instructor in accounting at Louisiana State University.

John P. Owen has returned to Louisiana State University as an instructor in economics.

Donald W. Paden has been appointed assistant professor of economics at the University of Illinois.

E. Z. Palmer, formerly professor of economics at the University of Kentucky, has been appointed professor of statistics, director of the Bureau of Business Research and chairman of the department of business research in the College of Business Administration of the University of Nebraska.

Herbert S. Parnes is an instructor in economics in the School of Business Administration of the University of Pittsburgh.

R. F. Patterson has been appointed dean of the School of Business Administration of the University of South Dakota.

Gustav Peck, labor consultant in the Library of Congress, is conducting a course in labor relations in the Graduate School of Social Science, the Catholic University of America.

Bernard D. Perkins has joined the staff of the School of Business Administration of the University of South Dakota as instructor in economics and accounting.

Jacob Perlman, of the Social Security Board, is giving a course in the Graduate School of Social Science, the Catholic University of America, during the current academic year.

Naomi M. Peterson is an instructor in the School of Business Administration at the University of Minnesota.

Robert B. Pettengill has assumed the duties of director of the Teaching Institute of Economics at the University of Southern California which is operated under a grant from the Alfred P. Sloan Foundation.

Clyde William Phelps, formerly of Chattanooga University and editor-in-chief of the *Journal of Marketing*, is associate professor of economics at the University of Southern California.

Frank S. Pinet has been appointed instructor in accounting and director of the Business Placement Bureau at the University of Kansas.

Stanley K. Platt has joined the staff of the University of Minnesota as an instructor in economics.

J. W. Polk is an instructor in the department of economics at Denison University.

Spencer D. Pollard has been named associate professor of economics at the University of Southern California.

Robert M. Poole, recently with the Civil Aeronautics Authority, is now assistant professor of accounting in the School of Business Administration at the University of Tennessee.

Earl Powers has been promoted from associate professor of accounting to acting head professor of accounting at the University of Florida.

Charles L. Prather, formerly of the University of Washington, is now professor of banking and finance on the College of Business Administration staff of the University of Texas.

L. L. Qualls has been appointed part-time assistant in the department of economics at the University of Illinois.

Frances Quantius has been promoted to assistant professor of economics at Ohio State University.

E. W. Reed has been appointed part-time assistant in the department of economics at the University of Illinois.

Frederick G. Reuss has resigned from his position in the Analysis Division of the U. S. Bureau of Old-Age and Survivors Insurance to become an associate professor of economics at Goucher College.

James G. Richardson is an instructor in economics at the University of Florida.

Edwin C. Robbins, formerly with the War Assets Corporation, is instructor in economics at the University of Oregon.

Frank L. Roberts, of the University of Southern California, has been appointed assistant professor of economics and business administration at the College of William and Mary.

Laurie S. Robertson has been appointed a part-time assistant in the department of economics of the College of Business Administration of the University of Nebraska.

Leo Rogin has been promoted from associate professor to professor of economics at the University of California at Berkeley.

William D. Ross, who recently served as economist with the Economics Division of the United States Office of Military Government for Germany in Berlin, has accepted an appointment as instructor in economics at Duke University.

R. Henry Rowntree has resigned as professor of economics at Ohio State University to become economic advisor to the Philippine War Damage Commission in Manila.

Catherine G. Ruggles, recently married to Mr. Hollis Gerrish, has resigned her position as associate professor of economics at the University of Illinois.

Arnold J. Ryden has joined the staff of the School of Business Administration of the University of Minnesota as an instructor.

Antioco Sacasa, of the Universidad Libre de Nicaragua, has joined the faculty of the University of Minnesota as an instructor in economics.

H. L. Santer has been appointed part-time assistant in the department of economics at the University of Illinois.

Oliver Sarosi has accepted an appointment as head of the department of economics at Western Maryland College.

Lloyd Saville, formerly price analyst with the Office of Price Administration, has been appointed assistant professor of economics at Duke University.

R. B. Saylor is a part-time assistant in the department of economics at the University of Illinois.

Wallace S. Sayre, formerly director of personnel in the Office of Price Administration, has been appointed professor of administration in the School of Business and Public Administration at Cornell University.

W. E. Schenk has been appointed part-time assistant in the department of economics at the University of Illinois.

E. B. Schmidt, assistant professor of economics in the College of Business Administration of the University of Nebraska, has resigned his position as tax consultant to the city of Lincoln to devote full time to teaching.

G. T. Schwenning, professor of business administration at the University of North Carolina, has returned to his teaching duties after an absence of five years during which he was associated with the U. S. Office of Education in Washington and Shrivenham American University in England.

Tibor Scitovszky has been appointed acting associate professor of economics at Stanford University.

Kenneth T. Setre has rejoined the faculty of the School of Business Administration at the University of Minnesota as an instructor in economics.

Nelson C. Shafer, Jr., has been appointed instructor in marketing at the University of Kansas.

William H. Shannon is associate professor of accounting in the School of Business and Public Administration at Cornell University.

Leroy A. Shattuck, Jr., has been appointed associate professor of finance in the School of Business Administration of the University of Pittsburgh.

Dwight Shepard is now serving as instructor in economics at Lafayette College.

Harald Shields, associate professor of business education on leave of absence from the School of Business, University of Chicago, has an appointment with the educational division of the American Military Government in Germany.

William F. Shors accepted a position as associate professor in the College of Business Administration at Butler University in January, 1946, following service in the Navy as Lieutenant Commander.

Edward C. Simmons has returned to the University of Michigan as assistant professor of economics.

J. W. Simpson is serving as instructor in economics at Purdue University.

Reuben E. Slesinger has returned to his post as assistant professor of economics in the School of Business Administration of the University of Pittsburgh after three years' service in the Army.

Gilbert N. Smith is a part-time assistant in the department of economics of the College of Business Administration of the University of Nebraska.

Paul Smith, recently discharged from the Navy, has accepted a position as instructor at Denison University.

Arthur Smithies, who is with the Bureau of the Budget, has resigned from the staff of the department of economics at the University of Michigan.

G. J. Soderman has taken up duties as an assistant in accounting at Louisiana State University following service in the Army.

Kenneth M. Spang, formerly of Yale University, has been appointed lecturer in economics in the School of Business of Columbia University for the current year.

E. S. Sparks, until recently dean of the School of Business Administration of the University of South Dakota, is continuing as a member of the teaching staff.

W. H. Spencer, who has been on leave of absence as regional director of the War Manpower Commission, returned to the School of Business at the University of Chicago in January, 1946, as Hobart W. Williams distinguished service professor of government and business.

Henry W. Spiegel, formerly head of the department of economics, Duquesne University, and recently returned from Brazil where he was engaged on a research project under the auspices of the Guggenheim Memorial Foundation, has joined the faculty of the Graduate School of Social Science, The Catholic University of America, as associate professor of economics.

Edward D. W. Spingarn has returned to Trinity College as assistant professor of economics following service with the Armed Forces in India.

Benjamin P. Spiro, formerly legal advisor to Special Division of Legation of Switzerland in Washington and more recently connected with the Foreign Trade Information department of the Irving Trust Company in New York, has been appointed assistant professor of economics at Duke University.

A. C. Stalnaker has assumed the duties of director of the Office of Student Placement and assistant professor of business organization at the Ohio State University.

James H. Stewart has been appointed assistant professor of economics at Washington and Lee University.

George W. Stocking has resigned as professor of economics at the University of Texas to become director of the Institute for Research in the Social Sciences and head of the department of economics at Vanderbilt University.

Robert M. Strahl, formerly at Ohio State University, is now assistant professor of marketing in the College of Business Administration at the University of Nebraska.

Joseph Sulkowski, formerly dean of the University of Poznan, Poland, has become a member of the faculty of the Graduate School of Social Science, the Catholic University of America, with the rank of assistant professor of economics.

Waino W. Suojanen, formerly Captain in the Army, has been appointed instructor in economics at the University of Vermont.

John Tarbell, formerly at the University of Illinois and Biarritz American University, has been appointed associate professor of economics at Lafayette College.

Lorie Tarshis, who was appointed assistant professor of economics at Stanford University in 1942 but who was prevented by his wartime activities from assuming his new duties at that time, is now a member of the department of economics at Stanford University.

Virginia Tauchar has been appointed instructor in economics at Vassar College for the current year to substitute for Professor Mabel Newcomer who is on leave.

Milton C. Taylor, formerly at the University of British Columbia, has been appointed instructor in economics at Michigan State College.

Elton TeKolste has been appointed a part-time assistant in the department of business organization and management of the College of Business Administration at the University of Nebraska.

Carey C. Thompson has resigned as dean of Amarillo College to accept an appointment as research consultant for the Texas Unemployment Compensation Commission.

James H. Thompson has accepted an appointment in the School of Business Administration of the University of Pittsburgh as instructor in economics.

Gerhard Tintner, of the department of economics and sociology and also of the department of mathematics at Iowa State College, has been promoted to a full professorship.

J. Russell Townsend, Jr., returned to his position of assistant professor in the College of Business Administration at Butler University in January, 1946, after an absence of three years during which he served as an officer in the Navy.

Truman Tracy is a part-time assistant in the department of economics at the University of Illinois.

Bernard F. Trimpe, formerly Lieutenant Commander in the Navy, has joined the staff of the School of Business Administration, University of Tennessee, as assistant professor of marketing.

J. Alden Trovillo has been appointed associate professor of industrial management at the University of Kansas.

Randall Tucker, formerly of Rhode Island State College, is instructor in economics at Trinity College.

Alvin E. Tuohino is assistant professor of accounting at the University of Kansas.

John G. Turnbull has resumed teaching in the department of economics at Tufts College after serving as Lieutenant in the Navy.

F. W. Tuttle, who has been with the War Labor Board and its successor, the Wage Stabilization Board, in Atlanta, has returned to the University of Florida as associate professor of economics.

Paul VanArsdell has returned as associate professor in the department of economics at the University of Illinois after a leave of absence for service in the Navy.

Daniel C. Vandermeulen has been appointed assistant professor of economics at Claremont College School for Men.

Royal S. Van de Woestyne has been appointed professorial lecturer in business administration in the School of Business of the University of Chicago.

John V. Van Sickle, research professor of economics at Vanderbilt University, has resigned to accept the chairmanship of the department of economics at Wabash College.

Arthur Vieth has joined the staff of the School of Business and Public Administration at Washington University as assistant professor of statistics.

William A. Vogely is part-time assistant in economics in Princeton University.

E. S. Wallace has returned to his position as head of the department of economics at Millsaps College following four years' service with the Office of Price Administration.

Robert F. Wallace has joined the staff of the School of Business Administration at the University of Minnesota as an instructor in economics.

Gerald E. Warren has been promoted from assistant professor to associate professor of economics at DePauw University.

William H. Wessen, Jr., has been appointed instructor in economics at Duke University.

Charles M. Whitlo has accepted an appointment as head of the department of retailing in the College of Commerce at the University of Southern California.

Ramey C. Whitney, of the University of Missouri, has accepted an appointment as associate professor of economics in the College of Business Administration at the University of Nebraska.

J. W. Wiley has been appointed part-time assistant in the department of economics at the University of Illinois.

Edward F. Willett has returned to Smith College as associate professor of economics after spending a year's leave of absence as research assistant to the Secretary of the Navy.

Rufus Wixon has been promoted to the rank of assistant professor of economics at the University of Michigan.

Howard Wright has resigned his position at the University of Florida as associate professor of accounting.

Wallace O. Yoder is associate professor of economics at DePauw University.

George H. Zeiss, Jr., has been appointed assistant professor of business communication at the University of Kansas.

PURPOSE OF THE AMERICAN ECONOMIC ASSOCIATION

The American Economic Association is an organization composed of persons interested in the study of political economy or the economic phases of political and social questions. As may be seen by examining the list of members printed in this supplement, not only are all the universities and the most prominent colleges in the country represented in the Association by their teachers of economics and related subjects, but a large number of members come from among businessmen, journalists, lawyers, men in public life, and others interested in economic principles, or, more often, in their applications to social life. The Association has, besides, a growing representation in foreign countries.

The annual meetings, usually held during the Christmas holidays, are arranged as forums for the discussion of scientific questions and problems of social and economic policy. They give opportunity for contact and general understanding among teachers, students, and businessmen interested in such questions. The meetings aim to counteract any tendency to particularism which geographical separation and diverse interests might otherwise foster.

The publications of the Association were begun in March, 1886. The first series of eleven volumes was completed by a general index in 1897. The second series, comprising two volumes, was published in 1897–99, and in addition thereto the Association issued during 1896–99 four volumes of *Economic Studies*. In 1900 a third series of quarterly publications was begun with the Papers and Proceedings of the Twelfth Annual Meeting, and was continued through 1910. *The Economic Bulletin*, issued quarterly and devoted to bibliography and current notes, was also published by the Association during the three years, 1908, 1909, and 1910.

In 1911 the Association began publishing the *American Economic Review*, a quarterly journal devoted to articles on economic subjects, reviews, abstracts of articles in current journals, and a classified bibliography of economic publications. During the thirty-four years of its existence, the *Review* has made a place for itself among the scientific journals of the country.

The American Economic Association is the organ of no party, sect, or institution. It has no creed. Persons of all shades of economic opinion are found among its members, and widely different views are given a hearing in its annual meetings and through its publications.

With the exception of the editor of the *American Economic Review* and the Secretary-Treasurer, the officers of the Association receive no remuneration for their services. Its entire receipts are expended for the editing, printing, and circulation of the publications and for the annual meetings.

CHARTER AND BY-LAWS OF THE AMERICAN ECONOMIC ASSOCIATION

The charter of incorporation of the American Economic Association, incorporated in the District of Columbia, February 3, 1923, provides as follows:

I. The name or title by which the society shall be known is the American Economic Association.

II. The time for which it is organized is perpetual.

III. The particular business and object of the society are as follows:

1. The encouragement of economic research, especially the historical study of the actual conditions of industrial life;

2. The issue of publications on economic subjects;

3. The encouragement of perfect freedom of economic discussion. The Association as such will take no partisan attitude, nor will it commit its members to any position on practical economic questions.

IV. The number of its trustees for the first year of its existence shall be fourteen.

The following bylaws have been adopted for the government of the Association:

I. Membership

1. Any person interested in economic inquiry may, on the nomination of a member, be enrolled in this Association.

2. There shall be six classes of members other than honorary: members paying an annual fee of $5.00; family members (two or more living at the same address, second membership without subscription to the publications of the Association) paying an annual fee of $1.00; junior members (available to graduate students for three consecutive years only) paying an annual fee of $3.00; subscribing members paying an annual fee of $10.00; contributing members paying an annual fee of $25.00 or more; and life members comprising those members who contribute $200.00 or more in a single payment. Life members shall be exempt from annual fees. Members shall have each year the privilege of designating the class of membership they choose for that year.[1]

3. Foreign economists of distinction, not exceeding twenty-five in number, may be elected honorary members of the Association.

4. Every member is entitled to receive, as they appear, all reports and publications of the Association.

II. Trustees

The trustees of this Association shall not be less than fourteen or more than fifteen in number, and the Board of Trustees shall be known as the Executive Committee. The Board of Trustees shall be composed of the persons elected as the Executive Committee at the time and place and in the manner set forth in the following bylaw providing for the election of officers.

III. Officers[2]

1. The Association shall have the following officers who shall be elective officers: a President, two Vice-Presidents, six elected members of the Executive Committee. The terms of office of the President and Vice-Presidents shall each be one year. The terms of office of the six elected members of the Executive Committee shall each be three years, two of the six terms of the six elected members of the Executive Committee to expire each year. Each regular term of office shall coincide with a calendar year or a multiple thereof.

2. As early in each year as practicable, the President of the Association shall appoint a Nominat-

[1] As amended at the December 28, 1940, annual meeting.

[2] Amendments as adopted at the annual meeting, December 29, 1933, and by mail ballot announced at the Business Meeting, January 26, 1946.

ing Committee, consisting of a past officer,[1] as chairman, and not less than five other members of the Association. The names of the Committee shall be published in the March or June issue of the *American Economic Review* with an invitation to the general membership that suggestions of nominees for the various offices be sent to the chairman of the Committee. The Nominating Committee shall be instructed to present to the Secretary of the Association on or before September 1 of each year a nominee for the presidency and two or more nominations for each elective office to be filled, the nominees being members of the Association. The candidate for president shall be selected by an electoral college consisting of the members of the Nominating and the Executive Committees. Space shall be provided on the ballot for the individual voter's alternative choice.[3]

3. Elective officers shall be chosen through elections to be held during the last three[1] months of the term of office of his predecessor. Each member shall be given the opportunity to vote by mail. The results of the election shall be certified and announced by the Secretary at the annual business meeting.

4. The Association shall have the following officers who shall be appointed by the Executive Committee: a Secretary, a Treasurer, a Managing Editor, and a Counsel. The terms of office of each of these officers shall be three calendar years. The Managing Editor shall, with the advice and consent of the Executive Committee, appoint members to an Editorial Board to assist him. The President may, at his discretion and with the advice and consent of the Executive Committee, appoint a Program Committee.

5. The Executive Committee shall consist of the President, the Vice-Presidents, the Secretary, the Treasurer, the Managing Editor, the three ex-Presidents who have last held office, and six elected members, provided that the Secretary, the Treasurer, and the Managing Editor shall not be entitled to vote in the Committee's meetings.

IV. Duties of Officers

1. The President of the Association shall preside at all meetings of the Association and of the Executive Committee, and in consultation with the Program Committee, shall prepare the programs for the annual meetings. In case of his disability, his duties shall devolve upon the Vice-Presidents in the order of their election, upon the Secretary, and upon the Treasurer.

2. The Secretary shall keep the records of the Association and perform such other duties as the Executive Committee may assign to him.

3. The Treasurer shall receive and have the custody of the funds of the Association, subject to the rules of the Executive Committee.

4. The Executive Committee shall have the control and management of the funds of the corporation. It may fill vacancies in the list of officers, and may adopt any rules or regulations for the conduct of its business not inconsistent with this constitution or with rules adopted at the annual meeting. It shall act as a committee on time and place of meetings and perform such other duties as the Association shall delegate to it. A quorum shall consist of five members.

5. The Editorial Board shall have charge of the publications of the Association. The Managing Editor shall be ex officio member and chairman of the Editorial Board.

6. The office of the corporation for legal purposes shall be at the office of the Counsel in the District of Columbia, and legal process against the corporation may be served on said Counsel.

V. Annual Meeting

The annual meeting of this corporation shall be held at such time and place as may be determined by the Executive Committee. Notice of such time and place shall be given by publication in the regular journal of the corporation, now known as the *American Economic Review*, at least ten days prior to such meeting. The first annual meeting shall be held at Providence, Rhode Island, on the 27th of December, 1923, at nine o'clock A.M., unless otherwise ordered by the Executive Committee.

[3] As amended at the December 29, 1938, and December 29, 1941, annual meetings.

EDITORIAL NOTE

The present edition of the biennial handbook of the Association contains the following information: lists of officers, past and present, charter and by-laws of the Association, a directory of members and a geographical enumeration of members and subscribers (with addresses), as of June 15, 1946, and statistical summaries.

This 1946 *Handbook*, with names and addresses of members and subscribers, does not follow in form the special-purpose "who's who" directories which were published in 1938 and in 1942. It is our plan to issue a directory in fuller form in 1948, before which time we hope to make further improvements in the classification of fields of economics. Our first thought was to delay publication of a revised directory until an improved classification could be adopted, but with the rapid changes occurring in our membership and subscription lists during the reconversion period, the publication of a simple handbook could not be further delayed.

Our Association is directly represented on the Social Science Research Council, the American Council of Learned Societies, and the National Bureau of Economic Research. Names of our representatives and of other officers and members of these organizations are presented.

Also of interest to our membership is the information contained at the end of the volume concerning the organization and activities of three regional economic associations with which many of our members are affiliated; namely, the Midwest Economic Association, the Southern Economic Association, and the Pacific Coast Economic Association.

The increasing amount and variety of inquiries received by this office prompt the Editor to include in this note the following summary of published sources of information concerning the activities of the Association:

1. *The American Economic Review*—a quarterly publication containing main articles, book reviews, bibliographical and personal notes, records of special investigations by individuals and public commissions.
2. *The Papers and Proceedings* of the annual meetings of the Association (edited by the Secretary)—main papers, round table summaries, together with reports of the Secretary, the Treasurer, the Editor, Finance Committee, Auditor, standing and special committees, minutes of the Executive Committee and of the business meetings. The appendix contains a cumulative list of the contents of the proceedings from 1911 and the publications of the Association since 1886.
3. *The Handbook*—a biennial publication, usually in the form of a directory containing names and addresses of members together with the year from which dates their continuous membership. In 1938 and 1942 specialized "who's who" directories were issued, containing information concerning the interests and activities of our members. The 1905 *Handbook* contained brief biographical sketches of members.
4. *Information Booklet*—describing the purposes, organization, and activities of the Association, designed to answer inquiries from prospective members. Sent free upon request.

JAMES WASHINGTON BELL, *Secretary*

Honorary Members

Albert Aftalion *1938*
Sir William Beveridge *1945*
Arthur L. Bowley *1932*
Sir John Clapham *1945*
L. Einaudi *1926*
Bèla Földes *1927*
Eli Heckscher *1938*
Gaston Jèze *1926*
Sir Walter Thomas Layton *1932*
Arthur Cecil Pigou *1922*
Charles Rist *1922*
D. H. Robertson *1938*
Arthur A. C. Spiethoff *1932*
Sidney Webb (Lord Passfield) *1929*

Note: The figures in italics indicate the year of election to honorary membership.

LIST OF MEMBERS

(As of June 15, 1946)

* Life members † Contributing members § Subscribing members ‡ Honorary members

NOTE: *The figures in italics after the name of a member indicate the year from which dates his continuous membership.*

Abbott, Charles C., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1928*

Abbott, Edith, Univ. of Chicago, Soc. Sci. Res. Bldg., Chicago 37, Ill. *1905*

Abbott, Lawrence, Hotchkiss Rd., Lakeville, Conn. *1945*

Abbott, Roy T., 1128 Cottman Ave., Philadelphia 11, Pa. *1944*

Abbott, William J., Jr., 438 S. Hanley Rd., St. Louis, Mo. *1939*

Abel, Kenneth N. K., 5109 New Hampshire Ave., N.W., Washington 11, D.C. *1944*

Abraham, Walter, 529 Yale Sta., New Haven, Conn. *1946*

Abrahamson, Albert, 1530 16th St., N.W., Washington, D.C. *1945*

Abramovitz, Carrie (Mrs. Moses), 6601 14th St., N.W., Washington, D.C. *1945*

Abramovitz, Moses, 6601 14th St., N.W., Washington, D.C. *1936*

Abramson, A. G., SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa. *1942*

Achinstein, Asher, 108 Battery Lane, Bethesda, Md. *1922*

Achour, Assam Y., American Univ., Beirut, Lebanon. *1944*

Ackerman, Sol, 2600 13th Rd. S., Arlington, Va. *1944*

Ackley, Gardner, 2808 Lee Blvd., Arlington, Va. *1938*

Adams, Arthur B., Univ. of Oklahoma, Norman, Okla. *1923*

Adams, Eric G., Industrial Development Bank, 201 Notre Dame St., W., Montreal, Canada. *1944*

Adams, George P., Jr., Cornell Univ., Dept. of Econ., Ithaca, N.Y. *1938*

Adams, James P., 2020 Devonshire Rd., Ann Arbor, Mich. *1921*

Adams, Leonard P., 31 Lamberson St., Valley Stream, L.I., N.Y. *1930*

Adams, Leonard W., Syracuse Univ., School of Bus. Admin., Syracuse, N.Y. *1927*

Adams, Quincy, 5 Oakwood Pl., Scarsdale, N.Y. *1941*

Adams, Thomas C., 242 S. 12th East St., Salt Lake City, Utah. *1929*

Adams, Walter S., 1 Buena Vista Ct., Urbana, Ill. *1946*

Adamson, Raymond K., Ohio Univ., Col. of Com., Athens, Ohio. *1934*

Adelman, M. A., 931 Longfellow St., N.W., Washington 11, D.C. *1945*

Adelson, Sonia, 5717 Blackstone Ave., Chicago 37, Ill. *1945*

Adler, Hans A., 525 West End Ave., Apt. 9F, New York 24, N.Y. *1943*

Adler, J(ohn) Hans, USACA Fin. Div., Hq. U. S. Forces in Austria, A.P.O. 777, c/o Postmaster, New York, N.Y. *1941*

‡**Aftalion,** Albert, 14 rue des Pyrennes, Toulouse, France. *1938*

Agger, Eugene E., Rutgers Univ., Dept. of Econ., New Brunswick, N.J. *1902*

Aikin, Ann M., New York State Col. of Home Econ., Ithaca, N.Y. *1942*

Aitchison, Beatrice, 1929 S St., N.W., Washington 9, D.C. *1940*

Aitchison, Clyde B., 1929 S St., N.W., Washington 9, D.C., *1943*

Akerman, Clement, R. 2, Washougal, Wash. *1914*

Akerstrom, Clarence E., 19 Beaman St., Poultney, Vt. *1936*

Albrecht, V. Norman, Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1945*

Alden, Lucas A., 144–36 75th Ave., Flushing, L.I., N.Y. *1941*

Alderfer, Evan B., Fed. Res. Bank, 925 Chestnut St., Philadelphia, Pa. *1934*

Alderson, Wroe, Lewis Tower, 33rd Fl., Philadelphia 2, Pa. *1939*

Alexander, Charles K., 510 Virginia Ter., Madison, Wis. *1940*

Alexander, Sidney S., Dept. of Econ., Littauer Center, Cambridge 38, Mass. *1944*

Alexander, Thomas R., 1121 Euclid St., N.W., Washington 9, D.C. *1943*

Alldredge, Rendel B., 386 N. 2nd Ave., Coos Bay, Ore. *1945*

Allen, Clark L., 626 Swift Ave., Durham, N.C. *1940*

Allen, Edward D., Iowa State Col., Agric. Annex, Ames, Iowa. *1939*

Allen, Edward J., 1900 S. Clayton, Denver, Colo. *1922*

Allen, Edward L., 3654 Park Pl., N.W., Washington, D.C. *1945*

Allen, Harland H., 6 N. Michigan Ave., Rm. 402, Chicago, Ill. *1928*

Allen, Harry K., 1501 W. University, Champaign, Ill. *1936*

Allen, Ruth A., Univ. Sta., Austin, Tex. *1928*
Allex, Victor, 635 Elliot St., N.E., Apt. 3, Washington 2, D.C. *1944*
Alley, W. Edward, 2612 Kingman Blvd., Des Moines, Iowa. *1942*
Allgood, Carrie L., 2551 17th St., N.W., Washington, D.C. *1946*
Alm I. W., Indiana Univ., School of Bus. Admin., Bloomington, Ind. *1937*
Alt, Richard M., 3615 Greenway Pl., Alexandria, Va. *1940*
Alter, Gerald M., 1530 16th St., N.W., Apt. 168, Washington 6, D.C. *1944*
Altman, Oscar L., 502 6th St., S.W., Washington 4, D.C. *1930*
Atschul, Eugen, U. S. Tariff Com., Washington, D.C. *1934*
Alvord, Graham G., 6 Phelps St., Kittery, Me. *1946*
Alyea, Paul E., Univ. of Alabama, University, Ala. *1928*
Aman, John A., 904 Caldwell St., Newberry, S.C. *1946*
Ambelang, Paul L., Interstate Com. Com., Bur. of Transp., Econ., and Statis., Res. Sec., Washington 25, D.C. *1942*
Ambs, K. F., La Sierra Col., Arlington, Calif. *1942*
Anderson, Benjamin M., Univ. of California, Dept. of Econ., Los Angeles, Calif. *1911*
Anderson, Charles D., Macmillan Co., 60 Fifth Ave., New York 11, N.Y. *1941*
Anderson, Clay J., 5328 Gladstone Pl., Apt. D, St. Louis, Mo. *1928*
Anderson, Curtis E., 2321 N. Wakefield St., Arlington, Va. *1946*
Anderson, David F., 247 Canterbury Rd., Westfield, N.J. *1934*
Anderson, Don S., Univ. of Wisconsin, Col. of Agric., Dept. of Agric. Econ., Madison, Wis. *1938*
Anderson, George R., Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1941*
Anderson, Karl L., 4312 N. 4th St., Arlington, Va. *1944*
Anderson, Kurt, 5926 Kensington St., Detroit, Mich. *1939*
Anderson, Lois M. (Mrs. Paul H.), 1228 Blair Mill Rd., Apt. 101, Silver Spring, Md. *1945*
Anderson, Paul H., 1228 Blair Mill Rd., Apt. 101, Silver Spring, Md. *1944*
Anderson, Robert E., 11 Sussex Ave., Chatham, N.J. *1945*
Anderson, Roy B. (Lt.), New Orleans Port of Embarkation, Control Office, New Orleans, La. *1943*
Anderson, Sven A., Rensselaer Poly. Inst., Troy, N.Y. *1931*
Anderson, Thomas J., Jr., New York Univ., School of Com., Washington Sq., New York, N.Y. *1922*
Anderson, William, Univ. of Minnesota, Dept. of Polit. Sci., Minneapolis, Minn. *1943*
Anderson, William H., 663 State St., Madison 5, Wis. *1944*
Andersson, Henry F., 504 W. Warren Ave., Big Rapids, Mich. *1945*
Andjiano, Peter B., 1431 Newton St., N.W., Washington, D.C. *1943*
Andress, Allen E., Box 164, Hiram, Ohio. *1934*
Andrew, Seymour L., American Tel. and Tel. Co., 195 Broadway, New York, N.Y. *1918*
Andrews, Benjamin R., Edgewater, N.J. *1917*
Andrews, Daniel K., 18 Indianola Ct., Columbus 1, Ohio. *1944*
Andrews, Paul R., Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N.Y. *1944*
Andrews, William H., Jr., 214 E. 5th St., Bloomington, Ind. *1937*
Andron, Mortimer, 226 N. Piedmont St., Arlington, Va. *1940*
Andrus, J. Russell, 602 Woodside Pkwy., Silver Spring, Md. *1937*
Angell, James W., Columbia Univ., New York 27, N.Y. *1924*
Angus, William N., Clinton Rd., Bedford Hills, N.Y. *1921*
Anrod, Charles W., 5060 N. Winthrop Ave., Chicago, Ill. *1942*
Anshen, Melvin, Indiana Univ., School of Bus., Bloomington, Ind. *1945*
Anson, Charles P., Roanoke Col., Salem, Va. *1930*
Anthony, Donald E., Kent State Univ., Dept. of Bus. Admin., Kent, Ohio. *1923*
Aquino, Tranquilino, 4520 MacArthur Blvd., N.W., Washington 7, D.C. *1945*
Arbuthnot, Charles C., 2263 Demington Dr., Cleveland 6, Ohio. *1904*
Aries, Robert S., 85 Livingston St., Brooklyn 2, N.Y. *1944*
Arlt, Carl T., 131 Forest St., Oberlin, Ohio. *1946*
Armbruster, Adolph H., Ohio Univ., Athens, Ohio. *1932*
Armore, Sidney J., Fed. Home Loan Bank Admin. (NHA), 101 Indiana Ave., N.W., Washington 25, D.C. *1946*
Armstrong, A. B., North Texas Agric. Col., Soc. Sci. Dept., Arlington, Tex. *1938*
Armstrong, Charles M., 8 Jordan Blvd., Delmar, N.Y. *1944*
Armstrong, Florence A., 2703 Russell Rd., Alexandria, Va. *1923*
Armstrong, Robert H., 12 E. 41st St., New York, N.Y. *1934*
Arndt, Ernst H. D., Office of the Registrar of Banks, The Treasury, Pretoria, South Africa. *1923*

Arndt, Karl M., Univ. of Nebraska, Sta. A, Lincoln, Neb. *1925*
Arner, George B. L., 504 Aspen St., N.W., Washington, D.C. *1910*
Arnold, Arthur Z., 133 W. 71st St., New York 23, N.Y. *1931*
Arnold, Sam, Ohio State Univ., Bur. of Bus. Res., Columbus 10, Ohio. *1946*
Arnolds-Patron, Paul, Texas Tech. Col., Div. of Com., Lubbock, Tex. *1942*
Arnow, Philip, 412 Linden Lane, Falls Church, Va. *1942*
Aronson, Robert L., Ohio State Univ., Dept. of Econ., Columbus 10, Ohio. *1945*
Arrington, Leonard J., 1906½ Fairview Rd., Raleigh, N.C. *1946*
Arrow, Anita, Univ. of Chicago, Snell Hall, Chicago 37, Ill. *1944*
Arrow, Kenneth J., c/o Miss Anita Arrow, Univ. of Chicago, Snell Hall, Chicago, 37, Ill. *1945*
Arthur, Henry B., Swift and Co., Gen. Office, Union Stock Yards, Chicago, Ill. *1940*
Arthur, I. W., Iowa State Col., Econ. Dept., Ames, Iowa. *1946*
Arwe, Henry C., 3 Kenworth Ave., Keene, N.H. *1941*
Ashby, Lowell D., Univ. of Wisconsin, Dept. of Econ., Madison 6, Wis. *1945*
Ashmen, Roy (Lt. Comdr.), Of. of Fiscal Dir., EXOS, Main Navy Bldg., Rm. 1311, Washington 25, D.C. *1942*
Ashton, Herbert, 29 Elliott Rd., Westmoreland Hills, Friendship Sta., Washington, D.C. *1928*
Ashton-Hatley, George, Apartado 809, Caracas, Venezuela, South America. *1942*
Asofsky, Abraham A., 762 Riverside Dr., New York 31, N.Y. *1936*
Atkins, David, Coastways Ranch, Pescadero, San Mateo Co., Calif. *1928*
Atkins, Paul M., 199 Inwood Ave., Upper Montclair, N.J. *1915*
Atkinson, L. Jay, 320 N. Piedmont St., Apt. 4, Arlington, Va. *1941*
Atkinson, Sterling K., Temple Univ., Philadelphia, Pa. *1930*
Atkinson, Thomas R., Fed. Res. Bank, Res. Dept., Atlanta 3, Ga. *1944*
Atkinson, Wilellyn M. (Mrs. L. Jay), 320 N. Piedmont St., Apt. 4, Arlington, Va. *1946*
Atkisson, James, R. 2, Box 722, Sanger, Fresno Co., Calif. *1944*
Atlas, Martin, 2500 Que St., N.W., Washington, D.C. *1942*
Atterberry, Phil R., 4601 27th St., Apt. 3, Mt. Rainier, Md. *1944*
Auerbach, Samuel J., 651 Alabama Ave., Brooklyn, N.Y. *1938*
Aul, Harold E., c/o Calvin Bullock, 1 Wall St., New York, N.Y. *1942*
Auld, George P., 6 Lowell Rd., Concord, Mass. *1920*
Aull, George H., Clemson College, S.C. *1928*
Austin, Charles B., 1159 E. Foothill Blvd., Altadena, Calif. *1911*
Austrian, Janet, 1417 Eutaw Pl., Baltimore, Md. *1941*
Axe, Emerson W., E. W. Axe and Co., P.O. Box 157, Tarrytown, N.Y. *1921*
Axelson, Ivar, 324 Menores Ave., Coral Gables 34, Fla. *1941*
Ayre, Josephine, 2016 D St., N.E., Washington 2, D.C. *1946*
Ayres, Clarence E., Univ. of Texas, Austin, Tex. *1932*
Ayres, Edith, Palisades, Rockland Co., N.Y. *1931*
Ayres, Leonard P., Cleveland Trust Co., Cleveland 1, Ohio. *1921*

Babson, Paul T., 210 Newbury St., Boston 16, Mass. *1945*
***Babson,** Roger W., Babson's Statis. Organization, Wellesley Hills 81, Mass. *1910*
Bach, George L., Fed. Res. Bd., Washington, D.C. *1941*
Bachelor, Robert W., American Bankers Asso., 22 E. 40th St., New York 16, N.Y. *1944*
Backman, Jules, 163 Ocean Ave., Brooklyn, N.Y. *1935*
Bacon, Marvin A., 8720 Cameron St., Silver Spring, Md. 1937
Bader, Louis, New York Univ., School of Com., Washington Sq., E., New York, N.Y. *1925*
Badger, Ralph E., 2656 Penobscot Bldg., Detroit 26, Mich. *1921*
Badgley, L. Durward, 256 Prospect St., South Orange, N.J. *1944*
Baer, Werner, 109–15 Queens Blvd., Forest Hills, N.Y. *1938*
Baer, Willis N., 406 N. Frederick St., Arlington, Va. *1937*
Bagley, Eleanor S. (Mrs. William C., Jr.), Lawrence Brook Manor, Box 95, R.F.D. 5, New Brunswick, N.J. *1937*
Bagley, William C., Jr., Lawrence Brook Manor, Box 95, R.F.D. 5, New Brunswick, N.J. *1936*
Bagwell, (Ida) Lucile, 44 Slocum Crescent, Forest Hills, L.I., N.Y. *1940*
Bahar, Mathilde (Mrs. Bernard Topkis), 1316 New Hampshire Ave., N.W., Washington, D.C. *1942*
Bahn, Ralph, 1301 15th St., N.W., Washington 5, D.C. *1945*
Bailer, Lloyd H., NLRB, 120 Wall St., New York 5, N.Y. *1938*
Bailey, Robert W., 9501 Lincolnwood Dr., Evanston, Ill. *1940*

Bailey, William B., 52 W. Hill Dr., West Hartford, Conn. *1901*
Bain, Joe S., Jr., Univ. of California, 119 South Hall, Berkeley, Calif. *1943*
Baird, Frieda, 1830 R St., N.W., Apt. 62, Washington, D.C. *1926*
Baker, Alonzo L., 1081 Leighton Ave., Los Angeles 37, Calif. *1945*
Baker, Carl O., Schneider Vocational High School, Stockton, Calif. *1926*
Baker, Elizabeth F. (Mrs.), Columbia Univ., Barnard Col., New York, N.Y. *1921*
Baker, George P., Dept. of State, Office of Transport and Communications Policy, Washington, D.C. *1928*
Baker, Harold B., General Motors Inst., Flint 2, Mich. *1936*
Baker, Nancy H. (Mrs. H. D.), 28 Delaware Ave., Dumont, N.J. *1941*
Baker, Oliver P., 15478 Pinehurst, Detroit, Mich. *1928*
Bakke, E. Wight, Yale Univ., Dept. of Econ., New Haven, Conn. *1939*
Bakken, Henry H., Univ. of Wisconsin, Col. of Agric., Madison, Wis. *1930*
Balabanis, Homer P., Humboldt State Col., Arcata, Calif. *1944*
Balderston, C. Canby, Univ. of Pennsylvania, Wharton School, Philadelphia, Pa. *1935*
Baldwin, Charles F., Jr., 3821 V St., S.E., Washington, D.C. *1943*
Baldwin, Claude D., Indiana Univ., Econ. Dept., Bloomington, Ind. *1939*
Ball, Jay Otis, 830 Chrysler Bldg., New York 17, N.Y. *1942*
Ballaine, Wesley C., Univ. of Oregon, School of Bus. Admin., Eugene, Ore. *1939*
Ballinger, Roy A., U. S. Dept. of Agric., Sugar Br., Production and Marketing Admin., Washington, D.C. *1933*
Bambrick, James J., Jr., 107–30 79th St., Ozone Park, L.I., N.Y. *1941*
Bampton, James W., Lees-Cochrance Co., Bridgeport, Pa. *1945*
Bancroft, E(verett) Clair, Colgate Univ., Econ. Dept., Hamilton, N.Y. *1919*
Bancroft, Gertrude, 3016 Dumbarton Ave., Washington 7, D.C. *1935*
Bangs, Robert B., 1606 Ripon Pl., Alexandria, Va. *1940*
Baran, Paul A., 2013 Columbia Rd., N.W., Washington, D.C. *1942*
Barbash, Jack, 8522 Milford Ave., Silver Spring, Md. *1942*
Barkas, Benjamin W., 5907 Kemble Ave., Philadelphia 38, Pa. *1923*
Barker, Carl, Shell Oil Co., 50 W. 50th St., New York, N.Y. *1942*
Barkin, Solomon, Textile Workers Union of America, 15 Union Sq., New York, N.Y. *1945*
Barloon, Marvin J., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston 63, Mass. *1946*
Barlow, Wallace D., Box 1, Blacksburg, Va. *1940*
Barnard, Chester I., 540 Broad St., Newark, N.J. *1934*
Barnes, Horace R., Franklin and Marshall Col., Dept. of Econ. and Bus. Admin., Lancaster, Pa. *1923*
Barnes, Irston R., 401 Ridge Rd., Hamden, Conn. *1928*
Barnes, Leo, Res. Inst. of America, 292 Madison Ave., New York 17, N.Y. *1944*
Barnes, Lillian P. (Mrs.), 3133 Connecticut Ave., N.W., Washington, D.C. *1940*
Barnwell, George W., Stevens Inst. of Tech., Hoboken, N.J. *1935*
Barr, Pelham, 501 Fifth Ave., New York 17, N.Y. *1942*
Barr, Robert J., Marquette Univ., Col. of Bus. Admin., Milwaukee 3, Wis. *1942*
Barrett, Joseph L., 344 E. 48th St., New York 17, N.Y. *1944*
Bartlett, C. A., Post Box 26, Zanzibar, Africa. *1933*
Bartlett, Roland W., 219 New Agric. Bldg., Urbana, Ill. *1931*
Barton, Hubert C., 1530 Mt. Eagle Pl., Parkfairfax, Alexandria, Va. *1944*
***Baruch,** B. M., 597 Madison Ave., New York, N.Y. *1913*
Basch, Antonin, Columbia Univ., Dept. of Econ., New York 27, N.Y. *1940*
Baska, Louis M., St. Benedicts Col., Atchison, Kans. *1935*
Bass, Lawrence W., 60 E. 42nd St., New York, N.Y. *1930*
Bassie, V. Lewis, 3908 S. 7th St., Arlington, Va. *1946*
Batchelor, Joseph A., Indiana Univ., Dept. of Econ., Bloomington, Ind. *1932*
Bates, Emmert W., American Book Co., 88 Lexington Ave., New York 16, N.Y. *1946*
Bates, Stewart, Dept. of Reconstruction and Supply, Ottawa, Ont., Canada. *1946*
Bauer, Charles C., Tax Foundation, Inc., 30 Rockefeller Plaza, New York, N.Y. *1943*
Bauer, John, American Public Utilities Bur., 280 Broadway, New York, N.Y. *1910*
Baugh, Russell H., Oklahoma A. and M. Col., Dept. of Econ., Stillwater, Okla. *1932*
Baumert, Watson A., 102 South Ave., Garden City, L.I., N.Y. *1927*
Baysinger, Reaves H., Box 89, Dewitt, N.Y. *1933*
Beach, W(alter) Edwards, 5719 Chevy Chase Pkwy., Washington, D.C. *1926*
Beadles, William T., Illinois Wesleyan Univ., Dept. of Econ., Bloomington, Ill. *1931*

Beal, Thomas A., 944 Military Dr., Salt Lake City 5, Utah. *1909*

Bearnson, J. B., Univ. of Utah, Salt Lake City, Utah. *1939*

Beattie, John R., Bank of Canada, Ottawa, Ont., Canada. *1946*

Beatty, Willard C., 42 Yale Ave., Gaspee Plateau, Providence 5, R.I. *1923*

Becker, A. P., Morningside Col., Sioux City, Iowa. *1944*

Becker, Joseph, Georgetown Univ., Washington 7, D.C. *1946*

Becker, Nathan M., 2512 Lee Blvd., Arlington, Va. *1936*

Beckett, Grace, Univ. of Illinois, Dept. of Econ., Urbana, Ill. *1936*

Beckhart, Benjamin H., Box 72, Vassar Col., Poughkeepsie, N.Y. *1922*

Beckman, Theodore N., Ohio State Univ., Col. of Com. and Journ., Columbus 10, Ohio. *1921*

Beckner, Earl R., 3319 Legation St., N.W., Washington 15, D.C. *1924*

Beckwith, Burnham P., 238 First St., S.E., Washington 3, D.C. *1943*

Beecroft, Eric, 2017 37th St., S.E., Washington, D.C. *1943*

Beede, Kenneth C., Dept. of State, Foreign Service of U.S.A., Mail Div., Washington, D.C. *1939*

Begdes, Kutsi, Yapi ve Kredi Bankasi, Istanbul, Turkey. *1946*

Begley, John P., Creighton Univ., Omaha, Neb. *1946*

Behling, Burton N., 4447 Davenport St., N.W., Washington, D.C. *1934*

Behlow, Robert R., Pan American Airways System, 135 E. 42nd St., New York 17, N.Y. *1942*

Behrendt, Richard F. W., Colgate Univ., Hamilton, N.Y. *1942*

Beisel, Albert R., Jr., 4821 46th St., N.W., Washington 16, D.C. *1944*

Bekker, Konrad, 222 Waller Ave., Lexington, Ky. *1939*

Belcher, Donald R., 195 Broadway, New York, N.Y. *1921*

Bell, Albert L., Franklin and Marshall Col., Dept. of Com., Lancaster, Pa. *1942*

Bell, David E., 3700 Massachusetts Ave., Apt. 422, Washington 16, D.C. *1941*

Bell, Harry P., Dartmouth Col., Dept. of Econ., Hanover, N.H. *1945*

***Bell,** James C., 240 E. 61st St., New York, N.Y. *1922*

Bell, James Washington, 1745 Chicago Ave., Evanston, Ill. *1916*

Bell, John F., Univ. of Illinois, Commerce Bldg., Urbana, Ill. *1927*

Bell, Spurgeon, 532 20th St., N.W., Washington, D.C. *1925*

Bell, Stuart, Community Hall, Gladwyne, Pa. *1944*

Bell, William J., 1001 Chislett St., Pittsburgh 10, Pa. *1943*

§**Beller,** William C., 18 W. 85th St., New York 24, N.Y. *1937*

Belman, Clare D. (Mrs.), 416 33rd St., S.E., No. 2, Washington 19, D.C. *1944*

Belmore, Carl W., 24 Elm St., Wakefield, Mass. *1936*

Beltran, Pedro G., Peruvian Embassy, Washington, D.C. *1938*

Belzak, Charles T. (T/5), Port Hq. Det., Station Complement, NYPE, BABT, Brooklyn, N.Y. *1946*

Bender, Wesley C., Univ. of Notre Dame, Notre Dame, Ind. *1937*

Bendiner, Irvin, 1520 Real Estate Trust Bldg., Philadelphia, Pa. *1934*

Benedict, Murray R., Univ. of California, Giannini Found., Berkeley, Calif. *1928*

Bengston, Karl J., 417 Vance St., Santa Ana, Calif. *1938*

Bengür, Âli Resai, 2202 Massachusetts Ave., N.W., Washington, D.C. *1944*

Benjamin, Harold, 329 W. 101st St., New York 25, N.Y. *1945*

Benner, Claude L., Continental American Life Insurance Co., 2024 du Pont Bldg., Wilmington, Del. *1922*

Bennett, Merrill K., Food Res. Inst., Stanford University, Calif. *1945*

Bennett, Philip A., 150 N. Day St., Orange, N.J. *1936*

Bennett, Virgil E., Bennett and Co., 200 Beaver St., Beaver, Pa. *1936*

Bennett, William W., Union Col., Schenectady, N.Y. *1921*

Bennion, Edward G., Standard Oil Co. of New Jersey, Econ. Dept., 30 Rockefeller Plaza, New York, N.Y. *1941*

Benoit-Smullyan, Emile, 127 35th St., S.E., Washington, D.C. *1942*

Berger, Adolph O., 16811 Talford Ave., Cleveland, Ohio. *1934*

Bergson, Abram, Bellevue Gardens, 1B, 116 Irvington St., S.W., Washington, D.C. *1937*

Berkowitz, Leonard M. (Lt.), O-588930, Hq. 1st Army Air Forces Base Unit, Bolling Field, D.C. *1942*

Berkowitz, Monroe, 24 Day St., Clifton, N.J. *1945*

Berman, Murray C., 69–40 Yellowstone Blvd., Forest Hills, N.Y. *1944*

Bermudez, Jorge, 2 Fernandez Ave., Santurce, P.R. *1932*

Bernfield, Frederick M., OPA, Fed. Office Bldg.

1, 3rd and D Sts., S.W., Washington 25, D.C. *1937*

Bernhard, Carolyn G. (Mrs.), 2120 16th St., N.W., Washington, D.C. *1941*

Bernhardt, Joshua, 6800 Brookville Rd., Chevy Chase 15, Md. *1920*

Bernheim, George B., 300 Observer Highway, Hoboken, N.J. *1916*

Bernstein, Edward M., 3513 Northampton St., N.W., Washington, D.C. *1935*

Bernstein, Joel, 5635 University Ave., Chicago 37, Ill. *1946*

Bernstein, Sylvia P. (Mrs.), 950 25th St., N.W., Washington 7, D.C. *1944*

Bernt, H. H., 353 W. 6th St., Elmira, N.Y. *1943*

Berolzheimer, Howard, Nat. Tax Equality Asso., 231 S. La Salle St., Chicago 4, Ill. *1944*

Berridge, William A., Metropolitan Life Insurance Co., 1 Madison Ave., New York 10, N.Y. *1921*

Berry, Thomas S., R. 1, Box 15, Atlanta, Ga. *1933*

Bertram, Rudolf F., Log Haven Rd., Knoxville, Tenn. *1937*

Best, Harry, Univ. of Kentucky, Lexington, Ky. *1936*

Bestor, Paul, 436 Ridgewood Ave., Glen Ridge, N.J. *1941*

Bethke, William, La Salle Extension Univ., 4046 Michigan Ave., Chicago, Ill. *1919*

‡**Beveridge,** Sir William H., Tuggal Hall, Chathill, Northumberland, England. *1945*

Beyer, Glenn H., NHA, Market Res. Sec., Housing Market, Washington 25, D.C. *1945*

Bezanson, Anne, 3440 Walnut St., Rm. 26, Philadelphia, Pa. *1918*

Bianchi, Renzo, Carleton Col., Dept. of Econ., Northfield, Minn. *1946*

Bidgood, Lee, University, Ala. *1911*

Bidwell, Percy W., 34 Chase Rd., Scarsdale, N.Y. *1912*

Bieber, George D., 921 Clarissa St., Pittsburgh, Pa. *1941*

Bigelow, Howard F., Western Michigan Col. of Educa., Kalamazoo, Mich. *1927*

Bigelow, Karl W., Columbia Univ., Teachers Col., 525 W. 120th St., New York 27, N.Y. *1925*

Biggs, Robert M., 16574 Parkside Ave., Detroit 21, Mich. *1941*

Bigham, Truman C., Box 2726, Univ. Sta., Gainesville, Fla. *1928*

Bigler, William R., 86 Highland Ave., Columbus, Ohio. *1946*

Billings, Arthur G., American Friends Service Com., 20 S. 12th St., Philadelphia, Pa. *1940*

Binder, Ruth F. (Mrs.), 48 Third St., Troy, N.Y. *1944*

***Bing,** Alexander M., 18 E. 48th St., New York, N.Y. *1919*

Bing, Ralph A., 78-11 Kew Forest Lane, Forest Hills, L.I., N.Y. *1946*

Bingham, Jonathan B., 5865 Nebraska Ave., Washington 15, D.C. *1943*

Bingham, Vernon A., 7201 Fifth Ave., Kenosha, Wis. *1943*

Bird, Francis H., Univ. of Cincinnati, Col. of Eng. and Com., Cincinnati, Ohio. *1909*

Birnkrant, Gladys C., 370 Temple St., New Haven, Conn. *1945*

Bishop, Morris C., 2248 Cathedral Ave., N.W., Washington, D.C. *1942*

Bishop, Philip W., 324 Willow St., New Haven, Conn. *1940*

Bishop, Robert L., M.I.T., Cambridge, Mass. *1946*

Bishop, Ward L., 516 Warner Ave., Los Angeles, Calif. *1932*

Bissell, Richard M., Jr., 3418 Que St., N.W., Washington, D.C. *1936*

Bittermann, Henry J., Treasury Dept., Div. of Monetary Res., Washington 25, D.C. *1928*

Bitting, H. Wayne, 2704 East West Highway, Chevy Chase, Md. *1943*

Black, Albert G., c/o Mrs. A. G. Black, 3 Mitchell Pl., New York 17, N.Y. *1925*

Black, Henry R. E., 4620 Hunt Ave., Chevy Chase 15, Md. *1940*

Black, John D., Harvard Univ., Littauer School of Pub. Admin., Cambridge 38, Mass. *1919*

Blackburn, Burr, Household Finance Corp., 919 N. Michigan Ave., Chicago, Ill. *1929*

Blackburn, Raymond F., Univ. of Pittsburgh, Dept. of Statis., Pittsburgh 13, Pa. *1939*

Bladen, Vincent W., Univ. of Toronto, 273 Bloor St. W., Toronto, Ont., Canada. *1924*

Blaine, Mrs. Emmons, 101 E. Erie St., Chicago 11, Ill. *1910*

Blair, Jacob J., 765 Gypsy Lane, Country Club Heights, Mt. Lebanon, Pa. *1935*

Blair, John M., 3010 Crest Ave., Cheverly, Md. *1944*

Blaisdell, Philip H., 3316 Coryell Lane, Parkfairfax, Alexandria, Va. *1946*

Blake, Edwin M., P.O. Box 210, Mount Kisco, N.Y. *1909*

Blake, J. Howard, Glenn L. Martin Co., Baltimore 3, Md. *1944*

Blakey, Roy G., Univ. of Minnesota, School of Bus. Admin., Minneapolis, Minn. *1912*

Blanchard, John D., Groton, Tompkins Co., N.Y. *1930*

Blanchard, Ralph H., Columbia Univ., New York 27, N.Y. *1912*

Blaser, Arthur F., Jr., 4018 35th St., Mt. Rainer, Md. *1940*

Bliss, Charles A., Lincoln, Mass. *1928*

Bliss, Z. W., Box 156, Providence, R.I. *1912*
Bloch, Henry S., U. S. Treasury Dept., Div. of Tax Res., Rm. 4044, Washington, D.C. *1938*
Block, Herbert, 3613 Gunston Rd., Parkfairfax, Alexandria, Va. *1941*
Blodgett, Ralph H., Univ. of Illinois, Dept. of Econ., Urbana, Ill. *1935*
Blomberg, Chester L., 2104 Selma St., New Orleans 19, La. *1943*
Bloom, Max R., 2901 Erie St., S.E., Washington 20, D.C. *1940*
Bloomberg, Lawrence N., FPHA, Longfellow Bldg., Washington, D.C. *1935*
Bloomfield, Arthur I., 33 Liberty St., New York, N. Y. *1938*
Bloomfield, Daniel, Boston Conference on Distribution, 80 Federal St., 14th Fl., Boston, Mass. *1934*
Blough, J. Roy, 3243 N. Abingdon St., Arlington, Va. *1924*
Blum, Fred H., 1804 N. Oak St., Arlington, Va *1946*
Blum, Jay W., Gambier, Ohio. *1937*
Blumberg, Aaron J., 517 Arbutus St., Philadelphia 19, Pa. *1944*
Boals, Gordon P., Dept. of Agric., Office of For. Agric. Rela., Washington, D.C. *1929*
Boatwright, John W., P.O. Box S, 910 S. Michigan Ave., Chicago, Ill. *1931*
Bobbitt, Elizabeth C., Frankford Hall 206, 40 Plattsburg Ct., N.W., Washington 16, D.C. *1943*
Bober, Mandell M., Lawrence Col., Appleton, Wis. *1927*
Bober, William C., Johns-Manville Corp., 22 E. 40th St., New York, N. Y. *1939*
Boddy, Francis M., Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1934*
Bodfish, Morton, 221 N. La Salle St., Chicago, Ill. *1926*
Boehmler, Erwin W., Fry, Lawson and Co., 135 S. La Salle St., Rm. 2060, Chicago 3, Ill. *1939*
Boer, Arend E., Univ. of Pittsburgh, Pittsburgh, Pa. *1937*
Boettler, Herbert F., 630 Vassar Ave., University City, Mo. *1922*
Bogart, Ernest L., 25 W. 10th St., New York, N.Y. *1897*
Bogen, Jules I., 315 W. 106th St., New York, N.Y. *1931*
Bohan, Richard T., 2008 S. 10½ St., Terre Haute, Ind. *1938*
Bohlman, Herbert W., 1301 37th St., Des Moines, Iowa. *1924*
Bohn, Carl, 331 Bement Ave., Staten Island 10, N.Y. *1936*
Bold, Ethel, 263 Brooklyn Ave., Brooklyn 13, N.Y. *1945*
Bolden, Norman R., 1096 Prospect Pl., Brooklyn, N.Y. *1932*
Bonbright, James C., Columbia Univ., School of Bus., New York 27, N.Y. *1915*
Bond, Floyd A., Univ. of Michigan, Econ. Dept., Ann Arbor, Mich. *1939*
Bonde, Ruth L., Northwestern Univ., 318 Fisk Hall, Evanston, Ill. *1941*
Boner, J. Russell, 4207 Russell Ave., Apt. 6, Mt. Rainer, Md. *1937*
Bonnell, Allen T., 1875 Monroe, N.W., Washington, D.C. *1936*
Bonnett, Clarence E., 7311 Hurst St., New Orleans 18, La. *1936*
Bookbinder, Albert I. A., 1258 27th St., Brooklyn 10, N.Y. *1945*
Boone, Gladys, Sweet Briar Col., Sweet Briar, Va. *1928*
Boonin, Lawrence I., 4082 Lancaster Ave., Philadelphia 4, Pa. *1943*
Boord, H. O., 305 Wilson Ave., Washington, Pa. *1937*
Boothe, Viva, Ohio State Univ., Bur. of Bus. Res., Columbus 10, Ohio. *1941*
Bopp, Karl R., Fed. Res. Bank, 925 Chestnut St., Philadelphia, Pa. *1936*
Borak, Arthur M., Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1927*
Borch, Einar A., Stop 63, Lake Rd., Avon Lake, Ohio. *1943*
Borden, Neil H., Morgan Hall, Soldiers Field, Boston, Mass. *1925*
Borendame, James E., 1250 N. Stone St., Chicago 10, Ill. *1942*
Bornemann, Alfred, 1618 Jefferson Ave., Brooklyn, N.Y. *1939*
Borth, Daniel, Jr., State Col. of Washington, School of Bus. Admin., Pullman, Wash. *1935*
Bortz, Nelson M., Dutch Acres, 7105 Wilson Lane, Bethesda 14, Md. *1932*
Bosland, Chelcie C., Brown Univ., Dept. of Econ., Providence, R.I. *1925*
Bostwick, Dudley C., 402 N. West St., Falls Church, Va. *1943*
Boudin, Louis B., 1776 Broadway, New York 19, N.Y. *1912*
Boulding, Kenneth E., Iowa State Col., Dept. of Econ., Ames, Iowa. *1945*
Bourne, Richard M., Univ. of Nebraska, Col. of Bus. Admin., Lincoln, Neb. *1945*
Bourne, William N., 34 Buckingham St., Cambridge 38, Mass. *1940*
Bouvier, Emile, Ecole Sociale Populaire, 1961 Rachel St., Montreal, Que., Canada. *1941*
Bovet, Eric D., 2702 Wisconsin Ave., N.W., Washington, D.C. *1942*
Bowen, Howard R., c/o Irving Trust Co., 1 Wall St., New York, N.Y. *1936*

Bowers, Edison L., Ohio State Univ., Commerce Bldg., Columbus 10, Ohio. *1923*
Bowers, Russell, Carnegie Inst. of Tech., Pittsburgh, Pa. *1946*
Bowler, John F., 4821 Jackson Blvd., Chicago, Ill. *1942*
‡**Bowley,** Arthur L., Univ. of London, London, England. *1932*
Bowman, Arthur C., Texas Military Inst., San Antonio, Tex. *1945*
Bowman, Dean O., 40 E. Oak St., Chicago, Ill. *1938*
Bowman, Mary J., Dept. of Labor, Bur. of Labor Statis., Cost-of-Living Div., Washington, D.C. *1934*
Bowman, Raymond T., 424 Meadow Lane, Falls Church, Va. *1929*
Bowman, Ward S., Jr., 1409 E. 54th Pl., Chicago, Ill. *1937*
Boyd, Robert K., Pacific Union Col., Angwin, Calif. *1942*
Bozic, Alexander, c/o Weatherhead Co., 300 E. 131st St., Cleveland 8, Ohio. *1938*
Braden, Samuel E., Indiana Univ., Dept. of Econ., Bloomington, Ind. *1938*
Bradford, Ernest S., 50 Argyle Ave., New Rochelle, N.Y. *1943*
Bradford, Frederick A., Lehigh Univ., Col. of Bus. Admin., Bethlehem, Pa. *1923*
Bradley, Barclay W., R. 1, Box 51, Indio, Calif. *1945*
Bradley, J. Harold, 138-A S. Camden Dr., Beverly Hills, Calif. *1942*
Bradley, Joseph F., c/o Dennis C. Bradley, Locust Gap, Pa. *1941*
Brady, Robert A., Univ. of California, Dept. of Econ., Berkeley, Calif. *1945*
Brainard, Harry G., Lee Gardens, Apt. 304, 808 N. Wayne St., Arlington, Va. *1935*
Brainerd, Carol Paxson (Mrs.), R. D. 2, West Chester, Pa. *1936*
Brand, Charles J., 1111 Investment Bldg., Washington 5, D.C. *1914*
Brandenburg, Samuel J., Clark Univ., Worcester, Mass. *1912*
Brandis, R(oland) Buford, 107 Anderson St., Greenville, S.C. *1940*
Brandt, Karl, Food Res. Inst., Stanford University, Calif. *1944*
Brann, William P., Univ. of Arkansas, Bur. of Res., Fayetteville, Ark. *1944*
Brannon, Gerard M., 3612 Ingomar Pl., N.W., Washington 15, D.C. *1944*
Bratt, Elmer C., Lehigh Univ., Bethlehem, Pa. *1928*
Bratter, Herbert M., Marlyn Apts., 3000 39th St., N.W., Washington 16, D.C. *1935*
Braun, Kurt, 722 Jackson Pl., N.W., Washington 6, D.C. *1944*
Braunthal, Alfred, 48-02 43rd St., Woodside, N.Y. *1939*
Braverman, Nathan N., 1355 Estes Ave., Chicago, Ill. *1941*
Bravo, Enrique C., 84 Cuba St., Mexico, D.F. *1943*
Bray, Charles P., First Nat. Bank Bldg., Oshkosh, Wis. *1945*
Bray, William H., 200 Rhode Island Ave., N.E., Washington, D.C. *1940*
Brecht, Robert P., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1941*
Breckenridge, Walter N., Waterville, Me. *1929*
Breen, Vincent I., 245 Linden St., San Francisco, Calif. *1944*
Breidenbach, Oscar H., Southwestern Louisiana Inst., Lafayette, La. *1941*
Breier, Frederick A., Univ. of San Francisco, Dept. of Econ., San Francisco 17, Calif. *1942*
Breithaupt, Le Roy, Oregon State Col., Corvallis, Ore. *1944*
Bremer, C(ornelius) Daniel, c/o American Express Co., 1414 F St., N.W., Washington, D.C. *1930*
Brennan, Andrew T., Dorchester House, Apt. 443, 2480 16th St., N.W., Washington 9, D.C. *1943*
Brethouwer, Melvin W., 4117 Davis Pl., N.W., Washington 7, D.C. *1936*
Brewer, John C., 954 Mulberry St., Galesburg, Ill. *1946*
Brewster, Maurice R., 332 Garmon Rd., N.W., Atlanta, Ga. *1939*
Breyer, Ralph F., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1921*
Bricault, George A., 8811 Elmhurst Ave., Elmhurst, L.I., N.Y. *1946*
Brickner, Arthur, 410 Central Park W., New York, N.Y. *1943*
Bridgman, Howard A., 246 Marlboro St., Boston 16, Mass. *1945*
Briefs, Goetz A., 4 Kenilworth Dr., Chevy Chase, Washington, D.C. *1938*
Briggs, Leland L., Univ. of Vermont, Dept. of Econ., Burlington, Vt. *1925*
Briggs, Robert P., Univ. of Michigan, Business Office, Ann Arbor, Mich. *1928*
Briggs, Royal J., 220 Mumford Hall, Columbia, Mo. *1935*
Briggs, Winfield S., Rhode Island State Col., School of Bus. Admin., Kingston, R.I. *1943*
Bright, Arthur A., Jr., 119 Holden Green, Cambridge 38, Mass. *1946*
Brill, Daniel H., 1702 Summit Pl., N.W., Washington, D.C. *1946*
Brissenden, Paul F., Columbia Univ., New York 27, N.Y. *1921*
Brock, Leslie V., 164 1st Ave., Waynesburg, Pa. *1936*

Brodinsky, Joseph E., 1100 First Nat. Bank Bldg., Pittsburgh, Pa. *1944*
Bronfenbrenner, Jean (Mrs. Martin), Fed. Res. Bank, Res. and Statis. Dept., Chicago 90, Ill. *1943*
Bronfenbrenner, Martin, Fed. Res. Bank, Res. and Statis. Dept., Chicago 90, Ill. *1938*
Bronson, Mary C., 130 Whitman Ave., West Hartford, Conn. *1946*
Brooks, Benjamin F., 107 E. Raymond Ave., Alexandria, Va. *1939*
Brooks, Robert P., Univ. of Georgia, School of Com., Athens, Ga. *1920*
Brossard, Edgar B., U. S. Tariff Com., 7th and E Sts., N.W., Washington, D.C. *1937*
Brown, Arline I., 4425 14th St., N.W., Washington, D.C. *1943*
Brown, Bernice S. (Mrs. Harold H.), 803 Kittitas St., Wenatchee, Wash. *1944*
Brown, Bonnar, Fed. Res. System, Div. of Security Loans, Washington, D.C. *1938*
Brown, Cecil K., Davidson Col., Davidson, N.C. *1928*
Brown, Courtney C., 44 Ogden Rd., Scarsdale, N.Y. *1935*
Brown, Douglas S., Temple Univ., Box 191, Philadelphia 22, Pa. *1944*
Brown, Douglass V., 46 Griggs Rd., Brookline, Mass. *1932*
Brown, Earl H., 402 Harvard Hall, 1650 Harvard St., Washington, D.C. *1943*
Brown, Edw. T., Wolcott, N.Y. *1944*
Brown, Elmer J., Univ. of Arizona, Tucson, Ariz. *1911*
Brown, Emily C., Vassar Col., Poughkeepsie, N.Y. *1927*
Brown, George H., Univ. of Chicago, School of Bus., Chicago 37, Ill. *1940*
Brown, George T., Garrett Park, Md., *1935*
Brown, Harry G., 403 S. Garth Ave., Columbia, Mo. *1909*
Brown, Horace B., Jr., Univ. of Mississippi, University, Miss. *1944*
Brown, J(ames) Douglas, 148 Mercer St., Princeton, N.J. *1925*
Brown, Joe E., Southern Methodist Univ., Econ. Dept., Dallas, Tex. *1942*
***Brown,** Lathrop, Saddle Rock Ranch, Big Sur, Calif. *1921*
Brown, Leo C., St. Louis Univ., St. Louis 3, Mo. *1946*
Brown, Lewis H., Johns-Mansville Corp., 22 E. 40th St., New York, N.Y. *1943*
Brown, Lyndon O., Stewart, Brown and Associates, 30 Rockefeller Plaza, New York 20, N.Y. *1928*
Brown, Mary V. (Mrs.), 233 E. 50th St., New York 22, N.Y. *1944*
Brown, Oscar F., 631 W. Tenth St., Dallas 8, Tex. *1945*
Brown, Pembroke H., Univ. of Illinois, 109 Commerce Bldg., Urbana, Ill. *1917*
Brown, Philip M., 3 Page St., Brunswick, Me. *1925*
Brown, Philip S., R.F.D. 2, Box 560, Alexandria, Va. *1945*
Brown, Weir M., 3811 S St., N.W., Washington 7, D.C. *1946*
Brown, William A., Jr., 3612 T St., Washington, D.C. *1926*
Brown, William F., Univ. of California, Los Angeles, Calif. *1945*
Browne, Arthur E., 17 Tauxemont, R.F.D. 1, Alexandria, Va. *1937*
Browne, Martha S. (Mrs.), 5000 27th St., Mt. Rainier, Md. *1941*
Brozen, Yale, 156 W. Burton Pl., Chicago 10, Ill. *1941*
Brumbaugh, Martin A., Univ. of Buffalo, Bur. of Bus. and Soc. Res., Buffalo, N.Y. *1930*
Bruner, Nancy, 7511 Main St., Kansas City 5, Mo. *1944*
Bruno, Vincent J., Carroll Col., Helena, Mont. *1943*
Brush, Waite S., 4 Irving Pl., Rm. 263S, New York, N.Y. *1940*
Bry, Gerhard, 457 Richmond Ave., Maplewood, N.J. *1946*
Bryan, Leslie A., 211 Standish Dr., Syracuse, N.Y. *1929*
Bryan, Robert F., 910 Stuart Ave., Mamaroneck, N.Y. *1936*
Bryant, Edward S., c/o Harvard Club, Boston, Mass. *1912*
Bryant, Lyle C., 1602 N. McKinley Rd., Arlington, Va. *1935*
Bryce, Robert B., 9 Belvedere Crescent, Ottawa, Ont., Canada. *1934*
Buchan, Leslie J., Tulane Univ., New Orleans, La. *1940*
Buchanan, Allen, 8429 Woodcliff Ct., Silver Spring, Md. *1936*
Buchanan, Daniel H., Laurel Hill Rd., Chapel Hill, N.C. *1929*
Buchanan, Frank, 1121 Washington St., McKeesport, Pa. *1935*
Buchanan, Jim M., 7349 S. Phillips Ave., Chicago 49, Ill. *1942*
Buchanan, Mark T., State Col. of Washington, Col. of Agric., Pullman, Wash. *1946*
Buchanan, Norman S., Univ. of California, Dept. of Econ., Berkeley, Calif. *1930*
Buchanan, Ray L., Box 660, Oakland 4, Calif. *1945*
Buck, Norman S., Yale Sta., New Haven, Conn. *1920*

Buckley, Louis F., 617 Lincolnway W., Mishawaka, Ind. *1939*
Bucknam, Roland F., 159 S. Allen St., Albany, N.Y. *1940*
Buckwalter, W. Roy, Temple Univ., School of Com., Philadelphia, Pa. *1943*
Budd, Thomas A., Univ. of Pennsylvania, Logan Hall, Philadelphia 4, Pa. *1925*
Budenz, Louis F., P. O. Box 86, Notre Dame, Ind. *1946*
Buechel, Frederick A., 2304½ Trinity, Austin, Tex. *1921*
Buechel, Henry T., Univ. of Washington, Col. of Econ. and Bus., Seattle, Wash. *1942*
Buehler, Alfred G., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1925*
Bukovsky, Alexis P., 8403 16th St., Silver Spring, Md. *1942*
Bullock, Paul, Jr., 1623A Fremont Ave., South Pasadena, Calif. *1942*
Bullock, Roy J., 2027 Woodreeve Rd., Washington 18, D.C. *1930*
Bullock, Theodore T., 2420 R., Lincoln, Neb. *1913*
Burbank, Harold H., 41 Fresh Pond Lane, Cambridge, Mass. *1909*
Burdick, E(dward) Douglass, Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1933*
Burdick, Raymond T., 311 Plum St., Fort Collins, Colo. *1923*
Burger, Alvin A., 605 Broad St., Newark, N.J. *1942*
Burgess, Eugene W., 5063 Nicollet Ave., Minneapolis, Minn. *1928*
Burgess, Kenneth F., c/o Sidley, Austin and Burgess and Harper, 11 S. La Salle St., Chicago, Ill. *1922*
Burgess, Robert W., Western Electric Co., 195 Broadway, New York, N.Y. *1924*
Burgess, W. Randolph, 55 Wall St., New York, N.Y. *1924*
Burhans, Nathaniel C., 1806 Orchard St., Alexandria, Va. *1939*
Burk, Marguerite C., 1725 17th St., N.W., Apt. 210, Washington 9, D.C. *1944*
Burk, Monroe, 1912 3rd St., N.E., Washington, D.C. *1942*
Burke, Joseph W., P. O. Box 218, Colorado Springs, Colo. *1939*
Burkhead, Jesse V., 430 Concord Ave., N.W., Washington 11, D.C. *1939*
Burley, Orin E., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1945*
Burnett, Esther P. (Mrs.), 3226 Valley Dr., Alexandria, Va. *1941*
Burnett, Judson O., Northern Montana Col., Havre, Mont. *1941*
Burns, Arthur E., 6521 32nd St., N.W., Washington, D.C. *1937*
Burns, Arthur F., 370 Central Park W., New York, N Y. *1930*
Burns, Arthur R., Crickets, Campbell Hall, N.Y. *1938*
Burns, Eveline M. (Mrs. Arthur R.), Crickets, Campbell Hall, N.Y. *1925*
Burns, Mary R. (Mrs. Wendell T.), Excelsior, Minn. *1944*
Burns, Robert K., 1700 Prairie Ave., Chicago 16, Ill. *1937*
Burnside, Malcolm, 302 Ave. C, Brooklyn 18, N.Y. *1941*
Burnstan, (Arthur) Rowland, Lawrance Aeronautical Corp., Linden, N.J. *1937*
Burrill, Cecil L., Standard Oil Co. of N.J., Budget Dept., 30 Rockefeller Plaza, New York, N.Y. *1940*
Burris, Edward C., Oklahoma A. and M. Col., School of Com., Stillwater, Okla. *1936*
Burroughs, Roy J., U. S. Dept. of Agric., Bur. of Agric. Econ., Div. of Agric. Fin., Washington 25, D.C. *1929*
Bursler, Norman, Univ. of Chicago, Law School, Chicago 37, Ill. *1946*
Burstein, Herman, 570 Isham St., New York 34, N.Y. *1944*
Burtt, Everett J., Jr. (T/4), 33747258, I-E Sec. Hq. ASCOMO, A.P.O. 315, c/o Postmaster, San Francisco, Calif. *1940*
Bushey, J. Hobart, Hunter Col., 68th St. and Lexington Ave., New York, N.Y. *1940*
Bussing, Irvin, 14 Wall St., Rm. 1408, New York, N.Y. *1935*
Butler, Hugh D., 1559 44th St., N.W., Washington 7, D.C. *1946*
Butlin, S. J., The University, Dept. of Econ., Sydney, Australia. *1945*
Butt. Louise E. (Mrs. S. M.), 1908 Florida Ave., N.W., Washington, D.C. *1941*
Butt, S. McClellan, 1908 Florida Ave., N.W., Washington, D.C. *1936*
Butt, William E., 538 E. Hamilton Ave., State College, Pa. *1922*
Buttenheim, Harold S., 470 Fourth Ave., New York, N.Y. *1933*
Butterbaugh, Grant I., 6815 20th Ave., N.E., Seattle 5, Wash. *1943*
Butters, J(ohn) Keith, Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1938*
Buxton, Horace C., Jr. (Lt. Comdr.), c/o Inspector of Naval Material, Park Square Bldg., Boston, Mass. *1943*
Bye, Carl R., 139 Niven St., Syracuse, N.Y. *1934*
Bye, Raymond T., Moylan, Pa. *1920*

Byland, John R., 7639 Cornell Ave., Chicago, Ill. *1941*

Byrne, John M., 1000 Phelps Apts., 506 E. Fourth, Cincinnati, Ohio. *1926*

Cable, John R., Missouri Valley Col., Marshall, Mo. *1922*

Cadman, John W., Jr., Princeton Univ., Princeton, N.J. *1937*

Cady, Elwyn L., 5100 Woodland Ave., Kansas City 4, Mo. *1931*

Cady, George J., 1571 Wesley Ave., Evanston, Ill. *1927*

Cahn, Bertram J., B. Kuppenheimer and Co., Congress and Franklin Sts., Chicago, Ill. *1935*

Cahn, Frances T., 3000 39th St., N.W., Washington, D.C. *1929*

Cahn, Frank B., Logwood Lodge, Pikesville 8, Md. *1943*

Caine, Walter E., American Gas Asso., 420 Lexington Ave., New York 17, N.Y. *1941*

Cairns, A., Int. Wheat Council, S. Agric. Bldg., Washington, D.C. *1943*

Calder, Philip R., c/o Revere Sugar Refinery, 333 Medford St., Charlestown, Mass. *1934*

Cale, Edward G., 6615 Fairfax Rd., Bethesda, Md. *1937*

Calhoun, Charles E., Univ. of Maryland, College Park, Md. *1943*

Calhoun, Charles P., Ronald Press Co., 15 E. 26th St., New York, N.Y. *1927*

Calhoun, Wilbur P., Univ. of Cincinnati, Cincinnati 21, Ohio. *1935*

Calkins, Francis J., 1831 E. La Fayette Pl., Milwaukee 2, Wis. *1934*

Calkins, Robert D., Columbia Univ., School of Bus., New York 27, N.Y. *1930*

Callis, Helmut G., Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1945*

Calmus, Hannah S. (Mrs. A.), 225 Sterling Pl., Brooklyn, N.Y. *1942*

Cameron, Roy E., San Diego State Col., San Diego 5, Calif. *1930*

Cammack, T. Emerson, 1729 Pine St., Philadelphia 3, Pa. *1942*

Camp, Chester B., 238 W. 44th, Indianapolis, Ind. *1930*

Campbell, A. Stuart, TVA, Knoxville, Tenn. *1943*

Campbell, Claude A., Univ. of Oklahoma, Col. of Bus. Admin., Faculty Exchange, Box 32, Norman, Okla. *1936*

Campbell, Douglas, British Raw Materials Mission, 1800 K St., N.W., Washington 6, D.C. *1944*

Campbell, F. Newell, 2953 McKinley St., Washington, D.C. *1938*

Campbell, George C., Troy Rd., R.F.D. 1, Boonton, N.J. *1945*

Campbell, Kenneth H., Chamber of Commerce, For. Com. Dept., 1615 H. St., Washington, D.C. *1944*

Campbell, Robert A., Vanderbilt Univ., Nashville, Tenn. *1908*

Canfield, Adelbert J., 40 Inman St., Cambridge, Mass. *1918*

Canning, John B., 1819 G St., N.W., Washington 6, D.C. *1920*

Canon, Helen, Cornell Univ., Col. of Home Econ., Ithaca, N.Y. *1940*

Canoyer, Helen G., Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1941*

Caplan, Benjamin, 2831 28th St., N.W., Washington 8, D.C., *1935*

***Capp,** Seth B., c/o Delivery Sec., Middle City Sta., Philadelphia 3, Pa. *1912*

Carey, Robert D., 621 N. Nelson, Arlington, Va. *1942*

Carey, Robert L., Columbia Univ., 711 Hamilton Hall, New York 27, N.Y. *1931*

Carlock, John E., Jr., 332 W. Hortter St., Philadelphia 19, Pa. *1940.*

Carlson, Knute E., 5241 42nd St., N.W., Washington, D.C. *1932*

Carlson, Marguerite V., 2720 Wisconsin Ave., N.W., Washington 7, D.C. *1945*

Carlson, Reynold E., Johns Hopkins Univ., Baltimore, Md. *1940*

Carlson, Valdemar, Yellow Springs, Ohio. *1936*

Carlton, Frank T., Case School of Applied Science, Cleveland, Ohio. *1906*

Carman, William W., Jr., 1001 15th St., N.W., Rm. 70, Washington 5, D.C. *1941*

Carmichael, Fitzhugh L., Univ. of Denver, Bur. of Bus. and Soc. Res., 211 15th St., Denver, Colo. *1940*

Carney, James J., Jr., Univ. of Miami, Coral Gables, Fla. *1941*

Carothers, Neil, Lehigh Univ., Bethlehem, Pa. *1927*

Carpenter, Cecil C., 253 Shady Lane, Lexington, Ky. *1929*

Carpenter, Otto F., Nat. Mediation Bd., 18th and F Sts., N.W., Washington 25, D.C. *1939*

Carpenter, William M., Edison Electric Inst., 420 Lexington Ave., New York, N.Y. *1926*

Carr, Harold N., 1740 G St., N.W., Washington, D.C. *1944*

Carr, Hobart C., Fed. Res. Bank, Domestic Res. Div., New York, N.Y. *1939*

Carroll, Clifford, Gonzaga Univ., Spokane 11, Wash. *1944*

Carroll, Dudley D., Chapel Hill, N.C. *1916*

Carroll, John M., 3804 Greystone Ave., Apt. C5, New York 63, N.Y. *1913*

Carroll, Mollie R., McLean, Va. *1922*

Carson, William J., Loudon Woods, Rye, N.Y. *1924*

Carter, John P., 2537 Regent St., Berkeley 4, Calif. *1944*
Carter, Lucian H., Univ. of Kentucky, Col. of Com., Lexington, Ky. *1929*
Carter, William A., Elm St., Norwich, Vt. *1928*
Carter, William H., Jr., Univ. of Connecticut, Storrs, Conn. *1930*
Cartinhour, Gaines T., Forest Hills Inn, Forest Hills, L.I., N.Y. *1938*
Carver, Thomas N., 226 Palisades Ave., Santa Monica, Calif. *1893*
Carwell, Joseph, UNRRA-Shanghai, A.P.O. 907, c/o Postmaster, San Francisco, Calif. *1946*
Cascino, Anthony, Bendix Home Appliances, Inc., 3300 W. Sample St., South Bend 24, Ind. *1946*
Case, Harold C. M., Univ. of Illinois, Dept. of Agric. Econ., Urbana, Ill. *1919*
Caskey, Wayne F., 1560 St. Vincent's Ave., La Salle, Ill. *1933*
Cassady, Ralph, Jr., Univ. of California, Col. of Bus. Admin., Royce Hall 250, Los Angeles, Calif. *1943*
Cassidy, Elliott, 5912 14th St., N.W., Washington 11, D.C. *1944*
Cassidy, Harry M., School of Social Work, 273 Bloor St., W., Toronto, Ont., Canada. *1939*
Cassidy, James K., Loras Col., Dubuque, Iowa. *1944*
Cassidy, William J., Temple Bldg., 903 Grand Ave., Kansas City 6, Mo. *1941*
Catlin, Warren B., Bowdoin Col., Brunswick, Me. *1909*
Catozella, Vincent, 2115 N. Glebe Rd., Arlington, Va. *1943*
Caulfield, Henry P., Jr., 1660 Lanier Pl., Washington, D.C. *1944*
Cave, Richard A., 38 Bulwer Pl., Brooklyn 7, N.Y. *1946*
Cave, Roy C., 467 Kentucky Ave., Berkeley 7, Calif. *1928*
Caverly, Harcourt L., 1000 Penobscot Bldg., Detroit 26, Mich. *1943*
Cavert, William L., 1443 Grantham St., St. Paul 8, Minn. *1942*
Cavin, James P., 7813 Aberdeen Rd., Bethesda, Md. *1940*
Cawthorne, Delmas R., Oxford, Ohio. *1939*
Cella, Francis R., Univ. of Oklahoma, Col. of Bus. Admin., Bur. of Bus. Res., Norman, Okla. *1945*
Center, Charles C., Bur. of Labor Statis., 341 Ninth Ave., New York, N.Y. *1945*
Cevallos, Bernardo, Consulado General de El Salvador, 270 Broadway, New York, N.Y. *1945*
Chace, James E., Jr., 1228 Kentucky Ave., Gainesville, Fla. *1930*
Chadbourne, Walter W., Hercules Powder Co., Wilmington, Del. *1939*
Chadwick, Leonard E., 1216 30th Ave., Oakland 1, Calif. *1942*
Chaikan, Israel B., 245 W. 25th St., New York 1, N.Y. *1944*
Chalmers, Henry, Bur. of Foreign and Domestic Commerce, Washington, D.C. *1918*
Chamberlain, Mariam (Mrs. Neil W.), Yale Univ., Labor and Management Center, 333 Cedar St., New Haven, Conn. *1942*
Chamberlain, Neil W., Yale Univ., Labor and Management Center, 333 Cedar St., New Haven, Conn. *1941*
Chamberlin, Edward H., 4 Channing St., Cambridge, Mass. *1928*
Chamberlin, Vell B., 316 Taylor Ave., Glen Ellyn, Ill. *1929*
Chambers, Raymond, Univ. of Buffalo, Edmund Hayes Hall, Buffalo, N.Y. *1922*
Chancellor, William E., 1603 W. Market St., Lima, Ohio. *1934*
Chandler, Howard, 1211 Hinman Ave., Evanston, Ill. *1946*
Chandler, Lester V., 211 S. Pleasant St., Amherst, Mass. *1939*
Chandrasekhar, Sripati, 55 Morton St., New York 14, N.Y. *1942*
Chapelle, C. C., 188 W. Randolph St., Chicago 1, Ill. *1944*
Chapman, Herman H., 509 9th St., Tuscaloosa, Ala. *1922*
Chapman, John M., Columbia Univ., School of Bus., New York 27, N.Y. *1920*
Charlton, Joseph W., 1407 Elm St., Grinnell, Iowa. *1944*
Chase, Charles H., Westchester Apts. 123-B, Washington 16, D.C. *1916*
Chase, Stuart, Georgetown, Conn. *1942*
Chattás, Clemente, Santa Rosa 37, Dep. 7, Cordoba, Argentina, South America. *1946*
Chau, Yau Pik, 910 20th St., N.W., Washington, D.C. *1945*
Chavrid, Vladimir D., 14-H Hillside Rd., Greenbelt, Md. *1945*
Chawner, Lowell J., 874 Adelaide Dr., Pasadena 4, Calif. *1933*
Checchi, Vincent, 221 Main St., Calais, Me. *1945*
Chen, Henry Hin-Cheung, 610 W. 115th St., New York, N.Y. *1942*
Chen, P. C., Canton Univ., Tung Hung St., Canton, China. *1944*
Chen, Sidney Y. C., National Univ. of Amoy, Amoy, Fukien, China. *1946*
Chenault, Lawrence R., 205 E. 78th St., New York 21, N.Y. *1938*
Cheney, Roy A., 2 Park Ave., New York, N.Y. *1940*

Chenkin, Alvin, 2813 Naylor Rd., S.E., Washington 20, D.C. *1945*
Cherington, Charles R., Harvard Univ., Littauer Center 319, Cambridge 38, Mass. *1939*
Cherington, Paul W., 1210 N. Pitt St., Alexandria, Va. *1946*
Cherniack, Nathan, 111 Eighth Ave., New York 11, N.Y. *1942*
Chernick, Jack, Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1943*
Chernick, Sidney, 319 Manitoba Ave., Winnipeg, Man., Canada. *1946*
Cherrington, Ben M., Univ. of Denver, Soc. Sci. Found., Denver 10, Colo. *1936*
Cherrington, Homer V., Iowa City, Iowa. *1923.*
Cheyney, William J., 917 15th St., N.W., Washington, D.C. *1932*
Chickering, Martha A., R. 2, Box 511, Fresno, Calif. *1931*
Childs, Frank E., Univ. of Minnesota, Dept. of Econ., Minneapolis 14, Minn. *1936*
Childs, James B., Library of Congress, Washington, D.C. *1925*
Chingos, E. George, 59 W. 27th St., New York, N.Y. *1934*
Chinlund, Edwin F., R. H. Macy and Co., 151 W. 34th St., New York 1, N.Y. *1924*
Chow, Hsin-Min, 521 W. 112th St., New York 25, N.Y. *1945*
Christelow, Allan, 3300 Gunston Rd., Alexandria, Va. *1944*
Christelow, Dorothy B. (Mrs. Allan), 3300 Gunston Rd., Alexandria, Va. *1946*
Christensen, Kenneth C., 245 Market St., Rm. 214, San Francisco 6, Calif. *1946*
Christenson, Carroll L., 213 S. Bryan Ave., Bloomington, Ind. *1925*
Chrysler, Russell L., 5116 Portland Ave., S., Minneapolis, Minn. *1937*
Chudson, Walter A., 2319 40th Pl., N.W., Washington, D.C. *1939*
Churchill, Arthur M., 2491 S. W. Sherwood Dr., Portland, Ore. *1944*
Chute, A(aron) Hamilton, Univ. of Minnesota, Vincent Hall, Minneapolis 14, Minn. *1937*
Chutima, Krongthong, 2309 Haste St., Berkeley, Calif. *1945*
Cist, Frank, Brewster, Mass. *1941*
Clabaugh, Samuel F., Westchester Apts., Washington, D.C. *1943*
Clague, Ewan, 3821 Woodley Rd., Washington, D.C. *1932*
‡**Clapham,** Sir John, Storey's End, Cambridge, England. *1945*
Clarenbach, Fred A., 1811 W. Lawn Ave., Madison, Wis. *1944*
Clark, Carl M., Univ. of Kentucky, Lexington, Ky. *1943*
Clark, E. Harrison, University Club, Washington, D.C. *1940*
Clark, Eugene, 74 Kirkland St., Cambridge 38, Mass. *1943*
Clark, Evans, 330 W. 42nd St., New York, N.Y. *1932*
Clark, Floyd B., College Station, Tex. *1941*
Clark, Fred E., 1907 Orrington Ave., Evanston, Ill. *1914*
Clark, Harold F., Columbia Univ., Box 507, Teachers Col., New York, N.Y. *1930*
Clark, John D., Univ. of Nebraska, Col. of Bus. Admin., Lincoln 8, Neb. *1929*
Clark, John M., 41 Wright St., Westport, Conn. *1909*
Clark, Lawrence E., 505 Rawlings St., Carbondale, Ill. *1921*
Clark, Lincoln H., 4608 Guilford Rd., College Park, Md. *1941*
Clark, Margaret (Mrs.), 2728 Porter St., N.W., Washington 8, D.C. *1944*
Clark, Robert F., Marietta Col., Marietta, Ohio. *1936*
Clark, Walter E., 524 Cheney St., Reno, Nev. *1902*
Clark, William C., 14 Belvedere Crescent, Ottawa, Ont., Canada. *1919*
Claydon, Arthur, Syracuse Univ., Dept. of Econ., Syracuse 10, N.Y. *1945*
Cleland, John S., Monmouth Col., Monmouth, Ill. *1919*
Clemen, Rudolf A., Edgerstoune Rd., Princeton, N.J. *1924*
Clemence, Richard V., 249 Tappan St., Brookline, Mass. *1941*
Clemens, Alphonse H., 7535 Lovella Ave., St. Louis, Mo. *1946*
Clemens, E(li) Winston, Univ. of Maryland. Col. of Bus. Admin., College Park, Md. *1935*
Clemens, Richard, Jr., 109 Westminster Rd., West Hempstead, L.I., N.Y. *1937*
Cleveland, William C., Indiana Univ., Dept. of Econ., Bloomington, Ind. *1922*
Clevenger, Clara H. (Mrs.), 824 E. Patterson. Ave., Kirksville, Mo. *1923*
Cline, Denzel C., 134 Kensington Rd., East Lansing, Mich. *1927*
Clorety, Joseph A., Jr., 8002 Newell Ct., Silver Spring, Md. *1943*
Close, James A., Univ. of Missouri, School of Bus. Admin., Columbia, Mo. *1941*
Clough, Shepard B., Columbia Univ., New York 27, N.Y. *1943*
Clover, Vernon T., Fort Hays Kansas State Col., Hays, Kans. *1942*
Clower, Fay W., State Col. of Washington, Pullman, Wash. *1940*
Clyman, Bernard, 5004 N. 5th St., Philadelphia 20, Pa. *1942*

Coase, Ronald H., London School of Econ., Houghton St., Aldwych W. C. 2, London, England. *1946*

Cobb, William C., Houghton Mifflin Co., 2 Park St., Boston, Mass. *1940*

Coblentz, William K., 2579 Yale Sta., New Haven, Conn. *1946*

Cochran, George H., Ohio State Univ., Commerce Bldg., Columbus 10, Ohio. *1945*

Cochran, Harry A., Temple Univ., Philadelphia, Pa. *1931*

Cogen, Charles, 1555 Odell St., New York, N.Y. *1938*

Cohan, Avery B., 230 Central Park S., Apt. 11A, New York, N.Y. *1941*

Cohen, Edna, 2078 62nd St., Brooklyn 4, N.Y. *1945*

Cohen, Frank, 88 Central Park W., New York, N.Y. *1939*

Cohen, Hannah L. (Mrs.), 225 Eastern Pkwy., Brooklyn, N.Y. *1944*

Cohen, Harry L., 1114 E. 38th St., Brooklyn 10, N.Y. *1922*

Cohen, Jerome B., 601 W. 110th St., New York 25, N.Y. *1943*

Cohen, Martin A., 6726 S. Cornell, Chicago 49, Ill. *1943*

Cohen, Morris, 4259 Leidy Ave., Philadelphia 4, Pa. *1942*

Cohen, Sam L., 41 Broad St., New York, N.Y. *1912*

Cohen, Wilbur J., Soc. Sec. Bd., Washington, D.C. *1936*

Coil, E(verett) Johnston, 800 21st St., N.W., Washington 6, D.C. *1930*

Coit, Charles G., 23 W. Cedar St., Boston 8, Mass. *1945*

Coit, Eleanor G., Labor Education Service, 437 W. 59th St., New York, N.Y. *1930*

Colberg, Marshall R., 3900 Hamilton St., Apt. K2, Hyattsville, Md. *1940*

Colbjornsen, Ole, c/o Norwegian Embassy, Washington 7, D.C. *1944*

Colby, Benjamin, 722 Jackson Pl., Washington, D.C. *1943*

Cole, Arthur H., Box 37, Cambridge, Mass. *1913*

Cole, Charles W., S. Pleasant St., Amherst, Mass. *1935*

Cole, David M., 405 10th St., N.E., Washington 2, D.C. *1941*

Cole, George J., c/o RFC, P. O. Box 5449, Metropolitan Sta., Los Angeles 14, Calif. *1944*

§**Cole,** Philip G., Shagbark Rd., Darien, Conn. *1942*

Coleman, Floyd B. T., 435 W. 119th St., New York, N.Y. *1935*

Coleman, George W., Mississippi Valley Trust Co., 225 N. Broadway, St. Louis 2, Mo. *1944*

Coleman, Raymond W, Carnegie Inst. of Tech., Pittsburgh, Pa. *1936*

Colen, Donald J., 220 Madison Ave., New York, N.Y. *1944*

Colgan, Virginia E., Asso. of Life Insurance Presidents, 165 Broadway, Rm. 910, New York, N.Y. *1941*

Colin, David H., New York Univ., Dept. of Econ., Washington Sq., New York 3, N.Y. *1942*

Collado, Emilio G., 3021 45th St., N.W., Washington, D.C. *1932*

Collins, Clem W., Univ. of Denver, School of Com., 2011 Glenarm Pl., Denver 5, Colo. *1936*

Collins, G. P., Oklahoma A. and M. Col., Dept. of Agric. Econ., Stillwater, Okla. *1943*

Collins, William J., St. Ambrose Col., Davenport, Iowa. *1936*

Colm, Gerhard, Executive Offices, Bur. of the Budget, Washington, D.C. *1934*

Colton, Shirley B. (Mrs.), 2965 Valentine Ave., Bronx, New York 58, N.Y. *1945*

Columba, Sister M., Mundelein Col., 6363 Sheridan Rd., Chicago, Ill. *1939*

Colvin, Woolf, 2707 Quentin Rd., Brooklyn, N.Y. *1930*

Comins, Harold N., 6 Park Ave., Wakefield, Mass. *1935*

Comish, Newel H., Univ. of Oregon, Eugene, Ore. *1918*

***Compton,** Wilson M., President's House, Pullman, Wash. *1919*

Comstock, Alzada, Mount Holyoke Col., South Hadley, Mass. *1930*

Comstock, Edward G., 6 Midland Gardens, Bronxville, N.Y. *1941*

Conant, Luther, 46 Shepard St., Cambridge, Mass. *1915*

Condliffe, John B., Univ. of California, Dept. of Econ., Berkeley, Calif. *1941*

Condoide, Mikhail V., 188 W. 10th Ave., Columbus, Ohio. *1937*

Conley, William H. Loyola Univ., 28 N. Franklin St., Chicago, Ill. *1931*

Conn, Harlan D., 113 Sharia Kasr el-Aini, Cairo, Egypt. *1941*

Connor, John, Loyola Univ., New Orleans 15, La. *1946*

Conover, Harry, Attaché, U. S. Legation, Berne, Switzerland. *1944*

Conrad, William E. F., 3530 White Haven Kkwy., N.W., Washington 7, D.C. *1939*

Converse, Paul D., Univ. of Illinois, Col. of Com. and Bus. Admin., Urbana, Ill. *1915*

Conwell, Ralph E., Univ. of Wyoming, Dept. of Econ. and Soc., Laramie, Wyo. *1938*

Coogan, Thomas F., 2190 W. 23rd St., Los Angeles 6, Calif. *1944*

Cook, Roy C., 1731 D St., N.E., Washington, D.C. *1941*

Cooke, Gilbert W., Bowling Green State Univ., Bowling Green, Ohio. *1931*

Coolsen, Frank G., Rensselaer Poly. Inst., 314 Proudfit Bldg., Troy, N.Y. *1946*

Coombs, Philip H., "Kenmary," River Rd., Bethesda, Md. *1939*

Coons, Arthur G., 1852 Campus Rd., Los Angeles, Calif. *1920*

Cooper, Chester L., 6313 16th St., N.W., Washington 11, D.C. *1942*

Cooper, Edward N., 1309 Holbrook St., N.E., Washington 2, D.C. *1943*

Cooper, Hobart S., 4113 Russell Ave., Mt. Rainier, Md. *1941*

Cooper, Howard E., Johns Hopkins Univ., Baltimore, Md. *1940*

Cooper, Lyle W., 7321 S. Luella Ave., Chicago 49, Ill. *1927*

Cooper, Orah (Mrs. Chester L.), 6313 16th St., N.W., Washington 11, D.C. *1942*

Cooper, Vernom, 605 Northridge Dr., West Lafayette, Ind. *1939*

Copeland, Melvin T., 324 Morgan Hall, Soldiers Field, Boston 63, Mass. *1909*

Copeland, Morris A., Nat. Bur. Money Flows Project, Div. of Res. and Statis., Fed. Res. Bd., Washington, D.C. *1921*

Coppock, Joseph D., 3901 Davis Pl., N.W., Washington 7, D.C. *1934*

Corbett, James F., 76 79th St., Brooklyn, N.Y. *1932*

Cordero, Rafael de J., Auditor of Puerto Rico, San Juan, P.R. *1939*

Corey, C(yrus) Stanley, 305 Highland Ave., Kent, Ohio. *1935*

Corey, Hibbert D., Col. of William and Mary, Dept. of Econ., Williamsburg, Va. *1940*

Cornish, Robert S., Univ. of Georgia, School of Bus., Athens, Ga. *1942*

Corry, Ormond C., Harrison-Corry Co., 622 Middlebrook Pike, Knoxville 1, Tenn. *1928*

***Cortney,** Philip, 410 Park Ave., New York 22, N.Y. *1944*

Cosson, Clarence, 1136 Des Moines Bldg., Des Moines 9, Iowa. *1927*

Cotton, Thomas L., 60 E. 42nd St., New York, N.Y. *1939*

Couper, Walter J., Harriman Rd., Irvington, N.Y. *1923*

Court, Andrew T., 1517 Iroquois, Detroit, Mich. *1940*

Coutinho, Flavio R., Banco Alianca do Rio de Janeiro, Caixa Postal, 924, Rio de Janeiro, Brazil, South America. *1945*

Cover, John H., 3731 39th St., N.W., Washington 16, D.C. *1921*

Cover, Virgil D. (Lt.), NAPTC, Naval Air Sta., Glenview, Ill. *1932*

Cowan, Donald R. G., 2920 Broxton Rd., Shaker Heights, Cleveland 20, Ohio. *1925*

Cowden, Dudley J., Country Club Rd., Chapel Hill, N.C. *1928*

Cowdrick, Edward S., 30 Rockefeller Plaza, Rm. 3115, New York 20, N.Y. *1926*

Cowherd, Hazel S. (Mrs.), W. E. Upjohn Inst. for Community Res., American Nat. Bank Bldg., Kalamazoo 4, Mich. *1946*

Cowles, Alfred, 1130 Lake Shore Dr., Chicago, Ill. *1940*

Cox, Alonzo B., Univ. Sta., Austin, Tex. *1923*

Cox, Garfield V., Univ. of Chicago, Faculty Exchange, Chicago 37, Ill. *1923*

Cox, Reavis, 540 Ogden Ave., Swarthmore, Pa. *1934*

Cox, Sherman J., 2234 Mira Mar Ave., Long Beach 4, Calif. *1942*

Coyne, William J., 622 New Sprankle Bldg., TVA, Knoxville, Tenn. *1940*

Crafer, Thomas W. B., 946 Ackerman Ave., Syracuse, N.Y. *1935*

Crafts, Prescott C., Jr., c/o Donald J. Moore, 581 Boylston St., Boston, Mass. *1944*

Craig, David R., American Retail Federation, 1627 K St., N.W., Washington, D.C. *1925*

Cramer, Edison H., Univ. of Colorado, School of Bus., Boulder, Colo. *1940*

Crawford, Arthur W., 6325 Woodside Pl., Chevy Chase, Md. *1935*

Crawford, John M., 3904 N. W. Edmunds, Washington, D.C. *1941*

Crawford, Mary M., Indiana Univ., Bloomington, Ind. *1937*

Crawford, Robert P., 2212 Washington St., Lincoln, Neb. *1934*

Crennan, Charles H., Continental Illinois Co., 231 S. La Salle St., Chicago, Ill. *1920*

Creswell, Charles F., 165 Broadway, Rm. 910, New York, N.Y. *1923*

Crisafulli, Virgil C., Wage Stabilization Bd., Guardian Bldg., Cleveland, Ohio. *1946*

Criz, Maurice, Dept. of Revenue, Property Tax Div., 105 W. Madison St., Rm. 1803, Chicago 2, Ill. *1945*

Crobaugh, Clyde J., 2683 St. James Pkwy., Cleveland Heights 6, Ohio. *1941*

Crockett, Earl C., Univ. of Colorado, Boulder, Colo. *1939*

Croll, Philip D., Sun Oil Co., 1608 Walnut St., Philadelphia, Pa. *1946*

Crompton, George, 695 Main St., Worcester, Mass. *1935*

Cronin, Bernard C., 2808 Lakeshore Ave., Oakland, Calif. *1944*

Cronin, John A., Spring Hill Col., Spring Hill, Ala. *1938*

Cronin, John F., 1312 Massachusetts Ave., N.W., Washington 5, D.C. *1939*
Crook, Wilfrid H., 325 Garland Ave., Takoma Park 12, Md. *1926*
Crosby, G(eorge) Reginald, 91 Lenox St., West Newton 65, Mass. *1925*
Cross, Hartley W., Connecticut Col., New London, Conn. *1931*
Cross, Ira B., 1454 Le Roy Ave., Berkeley 8, Calif. *1910*
Crouch, Charles E., Vanderbilt Univ., Nashville 4, Tenn. *1945*
Crowder, Edward T., Jr., Bur. of Budget, Div. of Statistical Standards, State Dept. Bldg., 17th and Pennsylvania Ave., Washington, D.C. *1934*
Crowder, Walter F., Mill Supplies, 330 W. 42nd St., New York 18, N.Y. *1937*
Croxton, Fred C., 1620 Waltham Rd., Columbus, Ohio. *1911*
Croxton, Frederick E., Columbia Univ., Hamilton Hall, New York 27, N.Y. *1941*
Crum, William L., 325 Littauer Center, Cambridge 38, Mass. *1921*
Crumbaker, Calvin, Univ. of Oregon, Eugene, Ore. *1925*
Culbertson, William S., Colorado Bldg., Washington, D.C. *1936*
Cullen, James A., 48 S. Second Ave., Mt. Vernon, N.Y. *1934*
Cumberland, William W., 25 Broad St., New York 4, N.Y. *1916*
Cummings, Herbert J., 1842 N. Capitol St., Washington, D.C. *1938*
Cunanan, Joaquin, 25 Broadway, Rm. 426, New York 4, N.Y. *1945*
Cunningham, William J., 28 Buckingham St., Cambridge, Mass. *1912*
Curran, Kenneth J., 11 Pelham St., Princeton, N.J. *1941*
Curtis, Clifford A., Queen's Univ., Dept. of Polit. and Econ. Sci., Kingston, Ont., Canada. *1924*
Curtis, Donald W., 1630 Hobart St., N.W., Washington, D.C. *1946*
Curtis, George B., Lehigh Univ., Bethlehem, Pa. *1926*
Curtis, L(ucian) Simington, 4459 Enright Ave., St. Louis, Mo. *1938*
Curtis, Roy E., Univ. of Missouri, Columbia, Mo. *1920*
Curtis, William R., 314 Greenway Blvd. E., Falls Church, Va. *1935*
Curtiss, Elisabeth A., Iowa State Col., Dept. of Econ. and Soc., Ames, Iowa. *1940*
Cusack, Lawrence A., Bur. of Int. Rev., 12th and Constitution Ave., N.W., Washington, D.C. *1934*
§**Cusack,** Sister Mary Thomasine, Rosary Col., River Forest, Ill. *1942*
Cusick, James, 9 S. Balch St., Hanover, N.H. *1932*
Custard, Harry L., 618 26th St., S., Arlington, Va. *1926*
Custis, Vanderveer, 1637 Orrington Ave., Evanston, Ill. *1904*
Cutler, Addison T., 1537 Ft. Davis St., S.E., Washington 20, D.C. *1938*
Cutler, Howard A., 202 E. Bloomington St., Iowa City, Iowa. *1944*
Cutts, Jesse M., 3737 S St., S.E., Washington 20, D.C. *1941*

Dade, Emil B., Univ. of Kansas, 116 W. Admin. Bldg., Lawrence, Kans. *1923*
Dadisman, Andrew J., West Virginia Univ., Col. of Arts and Sci., Morgantown, W.Va. *1917*
Daggett, Stuart, Univ. of California, Dept. of Econ., 119 South Hall, Berkeley, Calif. *1906*
Dahl, Randle E., 420 Williamson Bldg., Public Sq., Cleveland 14, Ohio. *1942*
Dahlberg, Arthur O., U. S. Economics Corp., 10 Rockefeller Plaza, New York 20, N.Y. *1940*
Dailey, Don M., 410 W. Sibley St., Howell, Mich. *1921*
Daily, O. F., Univ. of Oklahoma, Faculty Exchange, Norman, Okla. *1945*
***Dalal,** Rustomjee Dadiba, c/o Swiss Bank Corp., 11C, Regent St., Waterloo Pl., London, S.W. 1, England, *1931*
Dale, Ernest, c/o American Management Asso., Res. Div., 330 W. 42nd St., New York 18, N.Y. *1944*
Dalisay, Amando M., Office, President of the Philippines, Malacanan Palace, Manila, P.I. *1938*
Dameron, Wilbur R., 226 Hillside Ter., Great Kills, S.I., N.Y. *1927*
Danhof, Clarence H., 4111 25th St., N., Arlington, Va. *1936*
Dankert, Clyde E., Dartmouth Col., Dept. of Econ., Hanover, N.H. *1929*
Dannemann, Geraldo, 519 S. Rotherwood Ave., Evansville 4, Ind. *1946*
Dannenberg, Frederick M., 908 Montgomery St., Brooklyn 13, N.Y. *1936*
Das, Rajani K., 3200 16th St., N.W., Washington, D.C. *1944*
Dassel, Virgil H., 850 Montrose Ave., Columbus, Ohio. *1930*
Dauer, Ernst A., 8 Mohican Pl., Washington 16, D.C. *1937*
Daugherty, Carroll R., Hunter Col., 695 Park Ave., New York, N.Y. *1930*
Dauten, Carl A., 330 Midway, Kirkwood, Mo. *1945*

§**Da Vault,** James W., 206 Pioneer St., Rochester 11, N.Y. *1935*
Davenport, Donald H., 112 S. Lake Ave., Albany 3, N.Y. *1924*
Davey, Harold W., New York Univ., Inst. on Postwar Reconstruction, Washington Sq., New York 3, N.Y. *1946*
David, Paul T., 1644 32nd St., N.W., Washington, D.C. *1930*
Davidson, Clinton, Jr., 20 Pine St., New York 5, N.Y. *1943*
Davidson, Julius, 6144 Utah Ave., N.W., Washington 15, D.C. *1931*
Davies, George R., Univ. of Iowa, Col. of Com., Iowa City, Iowa. *1925*
Davies, Margaret G. (Mrs. Godfrey), 395 S. Bonnie Ave., Pasadena 4, Calif. *1936*
Davis, Dudley D., 3121 16th St., N.W., Apt. 43, Washington 10, D.C. *1946*
Davis, Edward H., 61 Oakland Ave., Waterbury 57, Conn. *1902*
Davis, Hiram S., Univ. of Pennsylvania, Indus. Res. Dept., 3440 Walnut, Philadelphia, Pa. *1945*
Davis, Horace B., 1078 Spruce St., Winnetka, Ill. *1929*
Davis, Jean S., Wells Col., Aurora, N.Y. *1923*
Davis, Joseph S., Food Res. Inst., Stanford University, Calif. *1911*
Davis, Pierpont V., 63 Wall St., New York, N.Y. *1912*
Davis, Richard M., Lehigh Univ., Dept. of Econ. and Soc., Bethlehem, Pa. *1941*
Davis, Shelby Cullom, Wilson Park Dr., Tarrytown, N.Y. *1938*
Davis, William C., 1560 Amsterdam Ave., New York 31, N.Y. *1939*
Davis, William Z., 441 Ford St., Niles, Ohio. *1934*
Davison, Sol, 604 34th St., Apt. 303, Oakland 9, Calif. *1936*
Davisson, Charles N., Univ. of Michigan, School of Bus. Admin., Ann Arbor, Mich. *1944*
Davisson, Malcolm M., Univ. of California, 119 South Hall, Berkeley, Calif. *1940*
Dawson, C. C., College Box 124, Berea, Ky. *1946*
Day, Clive, 44 Highland St., New Haven, Conn. *1908*
Day, Edmund E., 27 East Ave., Ithaca, N.Y. *1907*
Dean, Hazel, 961 W. 30th St., Los Angeles, Calif. *1945*
Dean, Joel P., 49 Windsor Ter., Yonkers, N.Y. *1935*
Dean, Prentice N., U. S. Tariff Com., Washington 25, D.C. *1924*
Dean, William H., 35 W. 110th St., Apt. 6D, New York, N.Y. *1945*
Dearing, Charles L., 722 Jackson Pl., Washington, D.C. *1935*
De Bard, August A., Jr., Oronoque Rd., Milford, Conn. *1932*
de Beers, John S., 2335 California St., N.W., Washington 8, D.C. *1942*
De Boor, June, 26 E. St. Clair, Cincinnati, Ohio. *1944*
de Capriles, Miguel A., New York Univ., Washington Sq., E., New York 3, N.Y. *1943*
De Castro-Barberena, Manuel, 208 E. 32nd St., New York, N.Y. *1942*
de Chazeau, Melvin G., c/o T. O. Yntema, 1313 E. 60th St., Chicago, Ill. *1934*
Decker, Jack, 336 17th Pl., N.E., Washington, D.C. *1943*
De Cow, Donald F., Bethany Col., Lindsborg, Kans. *1945*
de Dioszegh, Raoul K., 322 E. 57th St., New York 22, N.Y. *1945*
de Ford, Herman J., 316 S. La Salle St., Chicago 4, Ill. *1933*
De Ford, John F., 2310 S. 35th St., Omaha 5, Neb. *1944*
de Forest, Charles M., 130 W. 42nd St., New York 18, N.Y. *1945*
Degler, Carroll M., Univ. of New Hampshire, Dept. of Econ., Durham, N.H. *1942*
Deibler, Frederick S., 2306 Marcy Ave., Evanston, Ill. *1908*
Deimel, Henry L., Jr., Dept. of State, Washington, D.C. *1946*
Dein, Raymond C., Univ. of Arkansas, Col. of Bus. Admin., Fayetteville, Ark. *1941*
Delaplane, Walter H., St. Lawrence Univ., Canton, N.Y. *1938*
Dell, Burnham N., Academy Hill, Nantucket, Mass. *1925*
Demmery, Joseph, Univ. of Washington, Col. of Bus. Admin., Seattle, Wash. *1924*
Demond, Helen F., 2700 Que St., N.W., Washington 7, D.C. *1940*
De Mott, J. Piroh, 76 Palmer St., Passaic, N.J. *1946*
Dempsey, Bernard W., St. Louis Univ., 221 N. Grand Blvd., St. Louis, Mo. *1932*
Denis, Reid M., R.F.D. 1, Great Falls Rd., Vienna, Va. *1942*
Denison, Edward F., 1262 Martha Custis Dr., Parkfairfax, Alexandria, Va. *1941*
Dennison, Eleanor E., 3000 39th St., N.W., Washington 16, D.C. *1943*
Derber, Milton, 4811 N. Capitol St., Washington, D.C. *1942*
de Roover, Raymond, Oberlin Col., Dept. of Econ., Oberlin, Ohio. *1943*
de Schweinitz, Dorothea, 1208 30th St., N.W., Washington 7, D.C. *1928*

§**Desmond,** Thomas C., 94 Broadway, Newburgh, N.Y. *1943*
Despres, Emile, College Pl., Williamstown, Mass. *1945*
d'Essipri, Michael, Washington Trust Co., Pittsburgh, Pa. *1929*
de Tarnowsky, Ivan, 815 Maryland Ave., N.E., Washington, D.C. *1942*
Detlefsen, Guy-Robert, Pillsbury Mills, Inc., Minneapolis 2, Minn. *1946*
Deupree, Robert G., 8222 Larry Pl., Chevy Chase, Md. *1938*
Deutch, Michael J., 1210 S. Barton St., Arlington Village, Arlington, Va. *1943*
de Vegh, Imrie, 15 Broad St., New York 5, N.Y. *1941*
Devine, Carl T., 5014 Spruce St., Philadelphia 39, Pa. *1946*
Devine, Susan H. (Mrs. Carl T.), 5014 Spruce St., Philadelphia 39, Pa. *1946*
De Voe, Merrill, Ohio State Univ., Col. of Com. and Admin., Columbus 10, Ohio. *1945*
de Vyver, Frank T., 8 Sylvan Rd., Durham, N.C. *1928*
Dewey, Anne E. H. (Mrs. Lloyd E.), 5127 11th Rd., S., Arlington, Va. *1945*
Dewey, Francis H., Jr., 311 Main St., Worcester, Mass. *1915*
Dewey, Frederick A., 39 Broadway, Rm. 1518, New York 6, N.Y. *1913*
Dewey, Lloyd E., 5127 11th Rd., S., Arlington, Va. *1945*
Dewey, Ralph L., Iowa State Col., Dept. of Econ. and Soc., Ames, Iowa. *1926*
Dewhurst, J(ames) Frederic, Twentieth Century Fund, 330 W. 42nd St., New York 10, N.Y. *1934*
Diamond, Harold S., 427 85th St., Brooklyn, N.Y. *1945*
Diamond, Patricia M. (Mrs.), 427 85th St., Brooklyn, N.Y. *1939*
Diaz, Manuel O., Col. of Agric. and Mech. Arts, Mayaguez, P.R. *1945*
Dice, Charles A., Ohio State Univ., Commerce Bldg., Columbus 10, Ohio. *1919*
Dice, Marion E., General Petroleum Corp. of Calif., 108 W. 2nd St., Los Angeles 12, Calif. *1945*
Dickens, Albert E., 218 S. Race St., Princeton, Ind. *1944*
Dickens, Paul D., 3618 Oval Dr., Alexandria, Va. *1930*
Dickinson, Frank G., Univ. of Illinois, 411 Commerce Bldg., Urbana, Ill. *1923*
Dickinson, Z(enas) Clark, Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1920*
Diebold, William, Jr., 3258 Gunston Rd., Alexandria, Va. *1941*
***Dieckmann,** Adolf, 2423 Harrison Ave., Cincinnati, Ohio. *1918*
Dietrich, Ethel B., 1301 Vermont Ave., Washington 5, D.C. *1920*
Dietz, John W., 311 East Blvd., Gainesville, Fla. *1941*
Dillard, Dudley, Univ. of Maryland, College Park, Md. *1941*
Dillard, Louisa G. (Mrs. Dudley), Univ. of Maryland, College Park, Md. *1943*
Dimmler, George F., Columbia Univ., 1411 John Jay Hall, New York 27, N.Y. *1946*
Dimock, Marshall E., Northwestern Univ., 316 Harris Hall, Evanston, Ill. *1944*
Dingol, Solomon, 1000 Grand Concourse, Bronx, New York, N.Y. *1936*
Dinic, Carl J., 262 Ridge Rd., Douglas Manor, L.I., N.Y. *1926*
Dirksen, Cletus, St. Joseph's Col., Collegeville, Ind. *1942*
Dirlam, Joel B., c/o Dr. Rowland, New Jersey State Hospital, Trenton, N.J. *1942*
Ditmars, August, 89-47 115th St., Richmond Hill 18, L.I., N.Y. *1939*
Dittmer, Richard W., 3339 S. Stafford St., Arlington, Va. *1940*
Di Venuti, Anna, 20 Villa Ave., Everett 49, Mass. *1942*
Di Venuti, Biagio, Foreign Service of U.S.A., U. S. Embassy No. 1, A.P.O. 512, c/o Postmaster, New York, N.Y. *1945*
Divine, Thomas F., Marquette Univ., Johnston Hall, Milwaukee 3, Wis. *1939*
Dix, Samuel M., 29 Lenox Ave., Ridgewood, N.J. *1910*
Dixon, Floyd J., Balfour Tech. School, Regina, Sask., Canada. *1938*
Dixon, Roger C., 1614 Mt. Eagle Pl., Alexandria, Va. *1941*
Dizmang, Oscar K., N. 5411 Post St., Spokane, Wash. *1931*
Doan, Mason C., 1618 Dartford Rd., Essex, Baltimore 21, Md. *1944*
Doblin, Ernest M., 708 Highland Ave., N.W., Washington, D.C. *1943*
Dobrovolsky, Sergei P., Nat. Bur. of Econ. Res., W. 254th St. and Independence Ave., New York 63, N.Y. *1944*
Dockeray, James C., 4120 Woodberry St., University Park, Hyattsville, Md. *1934*
Dockson, Robert R., 803 S. Marengo, Apt. B, Pasadena, Calif. *1945*
Dockterman, M., 1432 Girard St., N.W., Apt. 204, Washington, D.C. *1944*
Dodd, David L., Columbia Univ., 414 School of Bus., New York 27, N.Y. *1922*
Dodd, James H., Mary Washington Col., Fredericksburg, Va. *1943*

Dodd, Paul A., Univ. of California, Dept. of Econ., Los Angeles, Calif. *1929*
Dolbeare, Harwood B., Box 2715, Univ. Sta., Gainesville, Fla. *1923*
Doleshy, Frank, 1741 Belmont Ave., Seattle 22, Wash. *1942*
Dolley, James C., Univ. of Texas, Univ. Sta., Austin 12, Tex. *1928*
Domar, Evsey D., 3250 Fed. Res. Bldg., 20th St. and Constitution Ave., Washington, D.C. *1942*
Donald, William J. A., Nat. Electrical Manufacturers Asso., 155 E. 44th St., New York, N.Y. *1912*
Donaldson, David N., Colorado Agric. Col., Fort Collins, Colo. *1929*
Donaldson, Elvin F., Ohio State Univ., Commerce Bldg., Columbus 10, Ohio. *1931*
Donaldson, John, George Washington Univ., Washington, D.C. *1925*
Donham, Wallace B., 5 Hilliard St., Cambridge, Mass. *1909*
Donnahoe, Alan S., 3410 Monument Ave., Apt. 11, Richmond 21, Va. *1940*
Donnelley, Thomas E., 350 E. 22nd St., Chicago, Ill. *1934*
Donohoe, Joseph M., 1517 33rd St., N.W., Washington 7, D.C. *1943*
Donovan, Clement H., Box 2032, Univ. Sta., Gainesville, Fla. *1933*
Donovan, Elizabeth W. (Mrs. Clement H.), Box 2032, Univ. Sta., Gainesville, Fla. *1941*
Doody, Francis S., 81 East St., Claremont, N.H. *1942*
Dorfman, Joseph, Columbia Univ., Dept. of Econ., New York 27, N.Y. *1939*
Dougall, Herbert E., Northwestern Univ., School of Com., Evanston, Ill. *1927*
Douglas, Dorothy W. (Mrs.), 54 Prospect St., Northampton, Mass. *1927*
Douglas, Edna, Iowa State Col., Agric. Annex, Ames, Iowa. *1946*
Douglas, George A., Alabama Col., Montevallo, Ala. *1937*
Douglas, James H., Jr., 33 S. Clark St., Chicago 3, Ill. *1942*
Douglas, Paul H., Wardman Park Hotel, Washington, D.C. *1915*
Douty, Harry M., 5016 42nd St., N.W., Washington, D.C. *1941*
Dowell, Austin A., Univ. of Minnesota, Univ. Farm, St. Paul, Minn. *1941*
Downey, William H., Box 5, Notre Dame, Ind. *1942*
Dowrie, George W., 1862 Waverley St., Palo Alto, Calif. *1916*
Doyle, Leonard A., Univ. of California, School of Bus. Admin., Berkeley, Calif. *1944*
Dozier, Howard D., 9409 Columbia Blvd., Silver Spring, Md. *1918*
Draisner, Abe M., 1404 L St., N.W., Washington 5, D.C. *1944*
Drake, Leonard A., Philadelphia Transportation Co., 1405 Locust St., Philadelphia 2, Pa. *1944*
Draper, Benjamin P., Georgetown, Colo. *1945*
Draper, Ernest G., Bd. of Governors, Fed. Res. System, Washington, D.C. *1921*
Dreiman, Lawrence S., 3429 Holmes Ave. S., Minneapolis, Minn. *1940*
Dressler, Boris G., 622 W. 141st St., New York 31, N.Y. *1941*
Dreyhausen, Hans V., Evans Products Co., 1608 20th St., N.W., Washington, D.C. *1945*
Drost, Paul E., Hampton Inst., Hampton, Va. *1946*
Drucker, Adolf B., 2121 H St., N.W., Washington, D.C. *1939*
Drury, Horace B., 5025 Wisconsin Ave., Washington, D.C. *1915*
Drutzu, Serban Theodore, 24 North Dr., Malba, L.I., N.Y. *1928*
Du Brul, Stephen M., 13-162 General Motors Bldg., Detroit 2, Mich. *1933*
Ducker, Edward S., 830 Queens Rd., Charlotte, N.C. *1945*
Duckworth, Raymond F., 2516 Tunlaw Rd., N.W., Washington, D.C. *1946*
Due, John F., Univ. of Utah, School of Bus., Salt Lake City 5, Utah. *1941*
Duerr, William A., Mid City Sta., Box 7295, New Orleans 19, La. *1941*
Duffus, William M., Ohio State Univ., Col. of Com. and Admin., Columbus 10, Ohio. *1917*
Duffy, James L., Holy Cross Col., Worcester, Mass. *1938*
Duffy, John F., Jr., 242 E. 14th St., New York 3, N.Y. *1945*
Dugan, James E., Washburn Municipal Univ., Dept. of Econ., Topeka, Kans. *1942*
Duggar, George S., 844 5th Ave., Los Angeles 5, Calif. *1941*
Dugger, Lewis M., Coca-Cola Co., P.O. Drawer 1734, Atlanta, Ga. *1941*
Dulan, Harold A., Univ. of Arkansas, Col. of Bus. Admin., Fayetteville, Ark. *1942*
Dulin, William C., 4500 Chase Ave., Bethesda, Md. *1946*
Duncan, Acheson J., Princeton Univ., Dept. of Econ., Princeton, N.J. *1926*
Duncan, Carson S., 902 Transportation Bldg., Washington, D.C. *1915*
Duncan, Delbert J., Northwestern Univ., School of Com., Evanston, Ill. *1926*
Duncan, Julian S., 4523 Sleaford Rd., Bethesda, Md. *1928*
Duncan, Kenneth, Pomona Col., Claremont, Calif. *1915*
Duncan, Virginia D. (Mrs. Harmon L.), P.O.

Box 387, c/o Station WDUK, Durham, N.C. *1940*

Duncombe, Henry, Dartmouth Col., Hanover, N.H. *1938*

Dunford, C. S., 705 Sunset Lane, East Lansing, Mich. *1939*

Dunham, Scott H., 1416 Arch St., Berkeley, Calif. *1934*

Dunkman, William E., 43 Ogden Ave., White Plains, N.Y. *1926*

Dunlop, John T., Harvard Univ., Dept. of Econ., Cambridge 38, Mass. *1941*

Dunn, Cecil L., Occidental Col., Dept of Econ., Los Angeles 41, Calif. *1942*

Durand, David, Hillside, W. 254th St. and Independence Ave., New York 63, N.Y. *1941*

Durand, E(dward) Dana, 3613 Norton Pl., N.W., Washington, D.C. *1898*

Durham, Walter A., Jr., 3761 N.E. Milton St., Portland 13, Ore. *1938*

Dutton, Henry P., 2242 Pioneer Rd., Evanston, Ill. *1935*

Dworetsky, Joseph H., 5406 Myrtle Ave., Brooklyn 27, N.Y. *1944*

Dye, Earl V., 332 Arbor Way, State College, Pa. *1920*

Dyer, Lewis A., 50 Federal St., Boston, Mass. *1946*

Eakens, Robert H. S., 2608 N. Powhatan St., Arlington, Va. *1941*

Eakin, Franzy, 264 N. Summit Ave., Decatur 11, Ill. *1936.*

Earle, Edward M., Inst. for Advanced Study, Princeton, N.J. *1945*

Earley, James S., Univ. of Wisconsin, Dept. of Econ., Sterling Hall, Madison 5, Wis. *1935*

Eastwood, R(obert) Parker, Columbia Univ., School of Bus., New York 27, N.Y. *1941*

Eaves, Lucile, 41 Clark Rd., Brookline, Mass. *1911*

Eberhart, E. Kingman, Col. of Wooster, Dept. of Econ., Wooster, Ohio. *1930*

Eberle, George J., 18627 Burbank Blvd., Tarzana, Calif. *1916*

Eby, Barnett S., St. Paul Presbyterian Church 50th and Baltimore Ave., Philadelphia, Pa. *1940*

Ecker-Rácz, L. László, Dept. of State, Mail Div., Washington, D.C. *1936*

Eckert, James B., 2513 14th St., N.E., Washington 18, D.C. *1938*

Eckler, A(lbert) Ross, 3643 Brandywine St., N.W., Washington, D.C. *1929*

Eckley, Robert S., P.O. Box 444, Peoria, Ill. *1944*

Eddy, Nelson H., The Best Foods, Inc., 88 Lexington Ave., New York 16, N.Y. *1946*

Edfeldt, Theodore R., 4115 Wisconsin Ave., N.W., Washington, D.C. *1946*

Edie, Lionel D., Lionel D. Edie and Co., 20 Exchange Pl., New York, N.Y. *1924*

Edminster, Lynn R., 4314 Klingle St., N.W., Washington, D.C. *1923*

Edmiston, Henry H., Fed. Res. Bank, St. Louis 2, Mo. *1942*

Edmunds, Stahrl W., Northwestern Nat. Life Insurance Co., 430 Oak Grove, Minneapolis 4, Minn. *1945*

Edwards, Corwin D., 1719 Hinman Ave., Evanston, Ill. *1925*

Edwards, Edward E., Indiana Univ., Bloomington, Ind. *1946*

Edwards, Ford K., 4841 Rodman St., N.W., Washington, D.C. *1946*

Edwards, George W., 41 Montrose Rd., Scarsdale, N.Y. *1922*

Edwards, Richard E., 50 N. Hood St., Peru, Ind. *1914*

Edwards, Wendell O., 261 Church St., Romeo, Mich. *1946*

Eells, Le Clair H., 549 River Ave., South Bend 6, Ind. *1946*

Effinger, R(obert) Craig, c/o Irving Trust Co., 1 Wall St., New York, N.Y. *1915*

Efroymson, Clarence W., R. R., Carmel, Ind. *1938*

Egand, Leo M., 2284 Grand Ave., New York 53, N.Y. *1943*

Egherman, Harvey M., 1230 Oberlin Blvd., Cincinnati, Ohio. *1940*

Egle, Walter P., Ohio State Univ., Dept. of Econ., Columbus 10, Ohio. *1935*

Ehrhorn, Oscar W., U. S. Court House, Foley Sq., New York, N. Y. *1909*

Ehricke, Karl N., Thomas A. Edison, Inc., Orange, N.J. *1941*

Ehrlich, Otto H., 123 W. 74th St., New York, N.Y. *1941*

‡**Einaudi,** Luigi, c/o Mario Einaudi, Cornell Univ., Dept. of Gov., Ithaca, N.Y. *1926*

Eisenberg, Gerson G., 1605 Court Square Bldg., Baltimore 2, Md. *1941*

Eisenberg, Walter L., 494 Bedford Ave., Brooklyn 11, N.Y. *1944*

Eisenstadt, Naum P., 1436 R St., N.W., Washington 9, D.C. *1941*

Eiteman, Wilford J., 126 Pinecrest Rd., Durham, N.C. 1929

Ekeblad, Frederick A., 2203 Ridge Ave., Evanston, Ill. *1942*

Ekland, Leonard M., Univ. of Detroit, Col. of Com., Detroit 21, Mich. *1931*

Elchibegoff, Ivan M., 4206 Kaywood Dr., Mt. Rainier, Md. *1945*

Eldéan, Fred A., 620 Fifth Ave., New York 20, N.Y. *1938*

Elder, Ivan W., 4213 N.E. 32nd Pl., Portland 11, Ore. *1945*

Elder, Robert F., 32 Peirce Rd., Wellesley Hills, Mass. *1930*

Eldridge, John G., Box 2627, Univ. Sta., Gainesville, Fla. *1927*

Eldridge, Lynn E., 4924 Albemarle St., N.W., Washington 16, D.C. *1942*

Eliot, Clara, Barnard Col., New York 27, N.Y. *1922*

Ellickson, J. C., 3420 McKinley St., N.W., Washington 15, D.C. *1945*

Ellickson, Katherine P. (Mrs.), 3420 McKinley St., N.W., Washington 15, D.C. *1945*

Elliott, Curtis M., Univ. of Nebraska, Dept. of Econ., Lincoln, Neb. *1936*

Elliott, Edith A., 840 Forest Ave., Evanston, Ill. *1941*

Elliott, George A., Univ. of Alberta, Edmonton, Alta., Canada. *1926*

Elliott, Margaret, Univ. of Michigan, School of Bus. Admin., Ann Arbor, Mich. *1925*

Elliott, Mrs. Roy F., Box 500, Plains, Tex. *1945*

Ellis, Howard S., Univ. of California, Dept. of Econ., Berkeley, Calif. *1930*

Ellis, Paul W., Bethany Col., Bethany, W.Va. *1937*

Ellis, Ray G., 14 Myrtle Ave., Springville, N.Y. *1921*

Ellis, Richard K., Iowa Wesleyan Col., Mt. Pleasant, Iowa. *1945*

Ellsworth, Heber M., Safeway Stores, P.O. Box 660, 4th and Jackson Sts., Oakland 4, Calif. *1944*

Ellsworth, J(ohn) Orval, 2607 22nd St., Lubbock, Tex. *1925*

Ellsworth, Paul T., Univ. of Wisconsin, Dept. of Econ., Madison, Wis. *1928*

Ellsworth, Von T., Calif. Farm Bur. Fed., 2161 Allston Way, Berkeley, Calif. *1929*

Elsasser, Robert W., 8004 Freret St., New Orleans, La. *1925*

Elwell, Fayette H., 2025 Chadbourne Ave., Madison, Wis. *1911*

Ely, J. Edward, 2049 N. Glebe Rd., Arlington, Va. *1931*

Ely, Margaret H. (Mrs. Richard T.), 107 Nameaug Ave., New London, Conn. *1944*

Ely, Roy J. W., Montana State Univ., Missoula, Mont. *1928*

Emelianoff, Ivan V., 2707 Adams Mill Rd., Washington 9, D.C. *1944*

Emmet, Boris, Stevens Hotel, Apt. 2300, 720 S. Michigan Blvd., Chicago 5, Ill. *1919*

Endler, Oscar L., 4404 46th St., N.W., Washington, D.C. *1940*

Engel, Edward J., Huntington Hotel, Pasadena 15, Calif. *1914*

Engers, James F., Bd. for Netherlands Indies, Surinam and Curacao, 10 Rockefeller Plaza, Rm. 1435, New York 20, N.Y. *1943*

Engle, Nathanael H., Univ. of Washington, Bur. of Bus. Res., 302 Commerce Hall, Seattle, Wash. *1925*

English, Donald, Cornell Univ., Ithaca, N.Y. *1911*

Engquist, Ernest J., Jr., 813 Chalfonte Dr., Alexandria, Va. *1930*

Engstrom, Birger, 135 W. Swissvale Ave., Pittsburgh 18, Pa. *1937*

Enke, Stephen, Univ. of California, Dept. of Econ., Los Angeles, Calif. *1940*

Ennis, J(ames) Harold, Cornell Col., Mt. Vernon, Iowa. *1925*

Ennis, William D., Wyckoff, N.J. *1933*

Ensley, Grover W., 4129 N. Henderson Rd., Arlington, Va. *1942*

Eppston, Harold A., 10 Custer Pl., Newark 8, N.J. *1944*

Epstein, Ralph C., 185 Cayuga Rd., Williamsville, N.Y. *1922*

Erdman, Henry E., Univ. of California, Div. of Agric. Econ., Berkeley, Calif. *1918*

Erdmann, Herbert H., 4142 Central Ave., Western Springs, Ill. *1932*

Erickson, Arthur E., Luther L. Wright High School, Ironwood, Mich. *1926*

Erickson, Roland A., 104 Forest St., Worcester, Mass. *1937*

Erion, G. L., 319 W. Ila, Fayetteville, Ark. *1946*

Erlon, Leo A., Marquette Univ., Milwaukee 3, Wis. *1946*

Eskildson, Hugo N., c/o Airlines Negotiating Committee, 36 W. 44th St., Rm. 315, New York 18, N.Y. *1941*

Estabrook, Vincent T., 25 Varick Rd., Waban, Mass. *1940*

Estey, James A., 230 Russell St., West Lafayette, Ind. *1916*

Estey, Marten S., 5008 V St., N.W., Washington 7, D.C. *1943*

Estrem, T. S., Northern Trust Co., 50 S. La Salle St., Chicago, Ill. *1943*

Eucharia, Sister Maria, St. Joseph's Col. for Women, 245 Clinton Ave., Brooklyn 5, N.Y. *1946*

Eulenberg, Alexander, 110 S. Dearborn St., Chicago, Ill. *1941*

Evans, George H., Jr., Johns Hopkins Univ., Baltimore, Md. *1927*

Evans, Roger F., 4430 Tibbett Ave., New York, N.Y. *1942*

Evans, Wilmoth D., U. S. Dept. of Labor, Bur. of Labor Statis., Washington, D.C. *1941*

Everett, Winthrop E., 385 Park Ave., Collingswood, N.J. *1944*

Ewing, John B., The Argonne, 1629 Columbia Rd., N.W., Washington 9, D.C. *1926*

Exter, John E., 2540 Military Rd., Arlington, Va. *1942*

Ezekiel, Mordecai J. B., Dept. of Agric., Bur. of Agric. Econ., Washington, D.C. *1924*

Faber, Fred L., 1228 Eye St., N.W., Washington, D.C. *1943*

Fabricant, Solomon, Nat. Bur. of Econ. Res., 1819 Broadway, New York 23, N.Y. *1933*

Fackler, Clarence W., New York Univ., New York, N.Y. *1926*

Fagan, Elmer D., 625 Amherst, Palo Alto, Calif. *1927*

Fain, Edith, P.O. Box 193, Johnson Hall, 411 W. 116th St., New York 27, N.Y. *1945*

Fair, Marvin L., 5 W. Irving St., Chevy Chase, Md. *1926*

Fairchild, Fred R., Yale Sta., New Haven, Conn. *1904*

Fairley, Lincoln, Int. Longshoremen's and Warehousemen's Union, 604 Montgomery St., San Francisco, Calif. *1945*

Falck, Edward, 1319 F St., N.W., Washington 4, D.C. *1934*

Falconer, John I., Ohio State Univ., Columbus 10, Ohio. *1914*

Faletti, Edith (Mrs. Anthony), 317 E. Yampa, Colorado Springs, Colo. *1945*

Falk, Isidore S., Soc. Sec. Bd., Bur. of Res. and Statis., Washington, D.C. *1940*

Farber, David J., 21 Elmira St., S.E., Washington 20, D.C. *1945*

Farber, Evelyn W. (Mrs. David J.), 21 Elmira St., S.E., Washington 20, D.C. *1945*

Farioletti, Marius, 4822 3rd St., N., Arlington, Va. *1944*

Farley, John T., 2191 Plaza, Schenectady 8, N.Y. *1939*

Farnsworth, Frank A., Jr., 28 Payne St., Hamilton, N.Y. *1943*

Farnsworth, Helen C. (Mrs.), Food Res. Inst., Stanford University, Calif. *1925*

Faubel, Arthur L., 12 Vermont Ave., White Plains, N.Y. *1919*

Faught, William A., Fed. Res. Bank, Sta. K, Dallas 13, Tex. *1946*

Faulkner, Harold U., 26 Barrett Pl., Northampton, Mass. *1926*

Faust, Lloyd M., Univ. of Oregon, School of Bus. Admin., Eugene, Ore. *1938*

Fautz, Elizabeth, 1317 Kenyon St., N.W., Apt. 3, Washington 10, D.C. *1944*

Federmann, Patricia H., 4406 Greenwich Pkwy., Washington 7, D.C. *1945*

Feffer, Louis C., 414 N. George Mason Dr., Arlington, Va. *1942*

Fein, Julian A., 114 Sterling Lane, Wilmette, Ill. *1946*

Feinn, Barbara A., Smith Col., Laura Scales House, Northampton, Mass. *1945*

Feis, Herbert, 1529 29th St., Washington 7, D.C. *1921*

Feit, Harold, 41-12 47th St., Sunnyside, L.I., N.Y. *1945*

Felde, Leon S., 360 Central Park W., New York 25, N.Y. *1942*

Feldman, Herman, Dartmouth Col., Amos Tuck School, Hanover, N.H. *1926*

Feldstein, Marc J., 2710 N. Lexington St., Arlington, Va. *1941*

Fellner, William J., 2938 Avalon Ave., Berkeley 5, Calif. *1941*

Fellows, Donald R., 2249 Eton Ridge, Madison, Wis. *1946*

Felsenthal, Leonard (S/Sgt.), 33743253, 687C DISCC, A.P.O. 403, c/o Postmaster, New York, N.Y. *1943*

Felsten, Benjamin E., 220 Allison St., N.W., Washington 11, D.C. *1943*

Fenimore, Joseph B., 7219 Pasadena Blvd., Pasadena Hills, St. Louis, Mo. *1939*

Fenninger, Carl W., c/o Provident Trust Co., 17th and Chestnut Sts., Philadelphia, Pa. *1925*

Fenninger, Laurence, Jr., R.F.D., Riegelsville, Pa. *1944*

Fentress, Calvin, 208 S. La Salle St., Chicago, Ill. *1933*

Ferber, Robert, 115 McClellan St., Bronx, New York 52, N.Y. *1945*

Ferebee, E(noch) Emory, 6300 Ridgwood Ave., Chevy Chase, Md. *1929*

Fergenson, M. C., 110-21 73rd Rd., Forest Hills, N.Y. *1946*

Ferger, Wirth F., 4635 N. Rock Spring Rd., Arlington, Va. *1935*

Ferguson, John M., Univ. of Pittsburgh, Pittsburgh, Pa. *1917*

Ferguson, Robert H., 402 Eddy St., Apt. 46, Ithaca, N.Y. *1942*

Fernald, Roy L., Winterport, Me. *1932*

Ferrand, Margaret M., 4125 18th Pl., N.E., Washington 18, D.C. *1944*

Ferrin, Dana H., D. Appleton-Century Co., 35 W. 32nd St., New York 1, N.Y. *1932*

Fetter, Frank A., 168 Prospect Ave., Princeton, N.J. *1894*

Fetter, Frank W., Haverford Col., Haverford, Pa. *1923*

Fetter, Theodore A., 1240 N. Stuart St., Arlington, Va. *1930*

Fetzer, John C., Union Col., Schenectady 8, N.Y. *1945*

Feuerlein, Willy J. A., E. I. du Pont de Nemours and Co., Treasury Div., Wilmington 98, Del. *1940*

Ficek, Karel F., 156 Brevator St., Albany, N.Y. *1926*

Fichtner, Charles C., 230 North St., Apt. C-2, Buffalo 1, N.Y. *1924*

Fick, John W., 420 Tremont St., North Tonawanda, N.Y. *1940*

Field, Bertrand B., 1445 Otis Pl., N.W., Washington 10, D.C. *1945*

Field, Frederick V., 23 W. 26th St., New York 10, N.Y. *1934*

Field, Kenneth, 234 Lytton Ave., Pittsburgh, Pa. *1936*

Field, Marshall, 250 Park Ave., New York 17, N.Y. *1920*

Field, Maxwell, 210 Lincoln St., Boston, Mass. *1941*

Field, Robert W, Purdue Univ., La Fayette, Ind. *1941*

Fife, Harry M., 12 College St., Middlebury, Vt. *1926*

Filie, Ferruccio A., c/o Ford Motor Co., 3000 Schaefer Blvd., Dearborn, Mich. *1945*

Filipetti, George, Univ. of Minnesota, School of Bus., Minneapolis 14, Minn. *1922*

Filley, H. Clyde, Col. of Agric., Lincoln, Neb. *1923*

Finck, David H., 15 Washington St., Newark, N.J. *1939*

Finger, Eleanor, Scotts Hotel, 2131 O St., N.W., Washington, D.C. *1941*

Fink, Cornelius W., Dickinson Col., Carlisle, Pa. *1923*

Finley, John W., 212 E. 32nd St., Brooklyn, N.Y. *1943*

Finn, Sister Isabelle Marie, Marymount Col., Salina, Kans. *1946*

Finnegan, Joseph H., 3350 Bronx Blvd., New York 67, N.Y. *1937*

Finney, Katherine, Connecticut Col., Dept. of Econ., New London, Conn. *1940*

Fireoved, Elgie L., 847 Greenwood Rd., Le Mars, Iowa. *1926*

Firestone, O. J., Dept. of Reconstruction and Supply, Ottawa, Ont., Canada. *1946*

Firfer, Alexander, 1632 V St., S.E., Washington 20, D.C. *1943*

Firth, Norman C., 290 Broadway, New York, N.Y. *1944*

Fischer, Harold, Franklin and Marshall Col., Lancaster, Pa. *1932*

Fischer, Harry S., 274 Madison Ave., New York, N.Y. *1941*

Fischer, Paul A., 6136 N. 22nd St., Arlington, Va. *1941*

Fishburn, John T., 9207 Kensington Pkwy., North Chevy Chase, Md. *1939*

Fishburn, Junius P., Box 1139, Roanoke, Va. *1923*

Fisher, Allan G. B., 10 Parks Rd., Oxford, England. *1943*

Fisher, Allan J., 2610 S. Troy St., Arlington, Va. *1937*

Fisher, Benjamin, 55 Clinton Pl., Bronx, New York, N.Y. *1944*

Fisher, Clyde O., Wesleyan Univ., Middletown, Conn. *1916*

Fisher, Ernest M., Columbia Univ., School of Bus., 116th and Broadway, New York 27, N.Y. *1923*

Fisher, Gerald C., 3800 Askew Ave., Kansas City 3, Mo. *1945*

***Fisher,** Irving, Box 1825, New Haven, Conn. *1894*

Fisher, Paul, Clark Univ., Worcester, Mass. *1945*

Fisher, Waldo E., Univ. of Pennsylvania, Wharton School, 310 Logan Hall, Philadelphia 4, Pa. *1926*

Fishman, Betty G. (Mrs. Leo), 1900 F St., N.W., Washington, D.C. *1941*

Fishman, Leo, 1900 F St., N.W., Washington, D.C. *1941*

Fiske, David L., 5315 MacArthur Blvd., Washington, D.C. *1943*

Fitch, John A., 122 E. 22nd St., New York, N.Y. *1910*

Fitch, Lyle C., Columbia Univ., Dept. of Econ., New York 27, N.Y. *1939*

Fitzgerald, Gertrude, American Bankers Asso., 12 E. 36th St., New York 16, N.Y. *1946*

Fitzgerald, J(ames) Anderson, Univ. of Texas, Austin, Tex. *1914*

Fitzgerald, Lloyd E., Univ. of Detroit, Col. of Com. and Fin., Detroit 21, Mich. *1935*

Fitzgerald, Mark J., Univ. of Notre Dame, Notre Dame, Ind. *1940*

FitzPatrick, Paul J., 4119 13th Pl., N.E., Washington 17, D.C. *1939*

Fitzsimmons, Cleo, 811 Carrollton, West Lafayette, Ind. *1945*

Flanders, Dwight P. (Lt. Col.), U. S. Military Academy, Dept. of Econ., Gov., and Hist., West Point, N.Y. *1937*

Flanders, Ralph E., Box 477, Springfield, Vt. *1932*

Flatley, L(ee) Thomas, Price, Flatley and Co., 609 Nat. Bank Bldg., South Bend 11, Ind. *1932*

Fleisher, Alexander, P.O. Box 5, Churchville, Pa. *1911*

Fleisher, Beatrice H. (Mrs. Benjamin), 1906 23rd St., S.E., Washington, D.C. *1945*

Fleisher, Benjamin, 1906 23rd St., S.E., Washington, D.C. *1945*

Fleming, Ralph D., 94 Grove Ave., Albany, N.Y. *1911*

Fletcher, Henry, Field Point Park, Greenwich, Conn. *1919*

Flexner, Jean A., 1718 Army Navy Dr., Arlington, Va. *1944*

Flink, Salomon, Univ. of Newark, Newark, N.J. *1942*

Flinn, Bernard W., 1636 Charles St., Rockford, Ill. *1932*
Flocken, Ira G., 1226 Lancaster Ave., Pittsburgh, Pa. *1909*
Florinsky, Michael T., Columbia Univ., Fayerweather Hall, New York, N.Y. *1934*
Flubacher, Joseph F., 424 Ashdale St., Philadelphia, Pa. *1938*
Flynn, John T., 15 E. 40th St., New York, N.Y. *1938*
Flynn, Oscar R., Jr., c/o Deerfield Packing Corp., Bridgeton, N.J. *1943*
Foery, Raymond W., 6 E. Mercer Ave., Llanerch, Del. Co., Pa. *1927*
‡**Földes,** Bèla, IV Duna utca I, Budapest, Hungary. *1927*
Foley, Ernest B., Boston Col., Chestnut Hill, Mass. *1938*
Foley, James H., Jr., 20 Summer St., Providence, R.I. *1940*
Foley, Mary J., Dominican Col., San Rafael, Calif. *1945*
Folsom, Marion B., 343 State St., Rochester, N.Y. *1924*
Folts, Franklin E., Harvard Univ., Grad. School of Bus., Morgan Hall, Soldiers Field, Boston, Mass. *1929*
Folz, William E., 250 N. Jefferson St., Moscow, Idaho. *1944*
Foote, Edmund W., 93 Lincoln St., Montclair, N.J. *1928*
Ford, Caroll W., Babson Inst. of Bus. Admin., Babson Park, Mass. *1937*
Ford, Robert S., Univ. of Michigan, Bur. of Gov., Ann Arbor, Mich. *1929*
Fordham, Herbert, Oak Farm, Greenport, L.I., N.Y. *1910*
Forjohn, Henry B., 202 Colonial Bldg., Allentown, Pa. *1944*
Forkosch, Morris D., 190 W. Burnside Ave., New York 53, N.Y. *1939*
Forth, Milburn L., 140 S. Dearborn St., Rm. 727, Chicago 3, Ill. *1944*
Forward, Kenneth A., Graduate Col., Princeton, N.J. *1946*
Foss, Feodore F., Emerson Rd., Woodsdale, Wheeling, W.Va. *1918*
Foster, J. Rhoads, E. Allendale Ave., Allendale, N.J. *1935*
Foster, Louis O., Dartmouth Col., 102 Tuck Hall, Hanover, N.H. *1938*
Foster, Major B., New York Univ., School of Com., Washington Sq., New York 3, N.Y. *1939*
Foster, Merle A., 1767 Lanier Pl., N.W., Washington 9, D.C. *1946*
Fournier, Leslie T., 718 Stradone Rd., Cynwyd, Pa. *1935*
Fox, Bertrand, 51 Park St., Williamstown, Mass. *1934*
Fox, Dorothy G. (Mrs.), Box 156, Sta. H, New York 25, N.Y. *1946*
Fox, Lawrence, 2035 H St., N.W., Washington 6, D.C. *1945*
Fox, Martin J., 2400 16th St., N.W., Washington, D.C. *1924*
Fox, Mortimer J., Jr., Foxden, Peekskill, N.Y. *1938*
Frain, H. La Rue, Univ. of Pennsylvania, Wharton School, Econ. Dept., Philadelphia 4, Pa. *1923*
Fraine, Harold G., 507 Rock Glen Dr., Wynnewood, Pa. *1929*
Frame, William A., Box 202, Fruitland Park, Fla. *1915*
France, Royal W., Rollins Col., Winter Park, Fla. *1943*
Francis, Brother Clement, Manhattan Col., New York, N.Y. *1934*
Franck, Louis R., c/o Mrs. A. Rosenstock-Franck, 46 rue Coulaincourt, Paris 18, France. *1946*
Franck, Peter G., 1734 P St., N.W., Washington, D.C. *1944*
Frank, Isaiah, 3052 S. Woodrow St., Fairlington, Arlington, Va. *1945*
Frank, William F., Technical Col., Normanton Rd., Derby, England. *1946*
Frankel, S. Herbert, c/o Barclays Bank, Circus Pl., London Wall, London, E.C. 2, England. *1943*
Franklin, H. F., 990 Notre Dame St. W., Montreal, Que., Canada. *1946*
Franklin, Harry L., 2700 Que St., N.W., Washington, D.C. *1938*
Franks, Theodore W., 424 W. Oakdale Ave., Chicago, Ill. *1944*
Fraser, Herbert F., Swarthmore Col., Swarthmore, Pa. *1926*
Frazer, George E., 39th Fl., Bd. of Trade Bldg., Chicago, Ill. *1935*
Freedman, Arthur M., 3294 Blaine, Detroit, Mich. *1940*
Freeman, Cornelia G. (Mrs. L. L.), 308 Fifth St., Racine, Wis. *1946*
Freeman, Edwin S., 12 Benton St., Wellesley, Mass. *1924*
§**Freeman,** Herbert C., 960 N. Broadway, Yonkers, N.Y. *1917*
Freeman, Ralph E., M.I.T., Cambridge, Mass. *1930*
French, Delbert R., 4301 Eastern Ave., Mt. Rainier, Md. *1929*
French, Robert W., Univ. of Texas, Col. of Bus. Admin., Austin 12, Tex. *1934*
Freund, Alexander M., 4744 N. Marvine St., Philadelphia 41, Pa. *1944*

Frickey, Edwin, Harvard Univ., Dept. of Econ., Cambridge 38, Mass. *1924*
Friedberg, Morris, Simmons Col., Dept. of Econ., Boston, Mass. *1936*
Friedman, Elisha M., 41 Broad St., New York 4, N.Y. *1918*
Friedman, Harry G., 25 E. 86th St., Apt. 15F, New York, N.Y. *1908*
Friedman, Milton, Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1941*
Friedrich, C. J., Littauer Center, Cambridge 38, Mass. *1945*
Friedrich, William G., c/o Cosmos Club, H St. and Vermont Ave., Washington, D.C. *1940*
Friend, Irwin, U. S. Sec. and Exch. Com., Philadelphia 3, Pa. *1946*
Frisbee, Ira N., 303 Bank of America Bldg., Beverly Hills, Calif. *1925*
Fritz, Wilbert G., 305 N. Kenmore St., Arlington, Va. *1930*
Fritzemeier, Louis H., 400 N. Lombard, Oak Park, Ill. *1937*
Frizol, Sylvester M., 3435 W. 75th St., Los Angeles 43, Calif. *1940*
Froehlich, Walter, Marquette Univ., Milwaukee 3, Wis. *1938*
Frohman, Charles E., Hinde and Dauch Paper Co., Sandusky, Ohio. *1946*
Froman, Lewis A., Univ. of Buffalo, Dept. of Econ., Buffalo, N.Y. *1930*
Fryxell, Carl A., Augustana Col., Rock Island, Ill. *1937*
Fulcher, Gordon S., 4712 Alton Pl., N.W., Washington 16, D.C. *1941*
Fuller, Bert C., 2 Singer Ave., Spring Valley, Rockland Co., N.Y. *1916*
Fuller, Denton A., Jr., Citizens Nat. Bank, Wellsville, N.Y. *1936*
Fuller, Douglas R., c/o Northern Trust Co., 50 S. La Salle St., Chicago, Ill. *1943*
Fuller, John K. G., 436 Seventh Ave., Pittsburgh 30, Pa. *1938*
Fulton, William G., 125 Avon St., Roselle Park, N.J. *1945*
Funkhouser, Richard L., 6693 Barnaby St., N.W., Washington 15, D.C. *1936*
Furniss, Edgar S., Grad. School, Yale Sta., New Haven, Conn. *1915*
Furth, Joseph H., Lincoln University, Pa. *1942*

Gadeholt, Bjorn, c/o Northwestern Electric Co., Public Service Bldg., Portland 4, Ore. *1941*
Gaetjen, Allen K., General Electric Co., Lamp Dept., Nela Park, East Cleveland 12, Ohio. *1946*
Gaffey, John D., 420 E. Colorado Blvd., Arcadia, Calif. *1940*
Gagliardo, Domenico, Univ. of Kansas, Dept. of Econ., Lawrence, Kans. *1925*
Gainsbrugh, Martin R., 247 Park Ave., New York, N.Y. *1946*
Galbraith, John K., Fortune Mag., Time and Life Bldg., Rockefeller Center, New York 20, N.Y. *1939*
Galbreath, C(harles) Edward, 111 Keeler St., Endicott, N.Y. *1934*
Gale, Hoyt R., 669 Sturtevant Dr., Sierra Madre, Calif. *1938*
Galenson, Walter, c/o L. P. Galenson, 11 Park Ave., New York, N. Y. *1938*
Galigniana, Lucas M., Arendles 2439, Buenos Aires, Argentina, South America. *1942*
Gallahue, Edward E., 3209 Walbridge Pl., N.W., Washington 10, D.C. *1944*
Galloway, Lee, Lake Wales, Fla. *1909*
Galloway, Leon J., 15 Twinlawns Ave., Hicksville, N.Y. *1934*
Galpin, Henry L., 145 Everit St., New Haven 11, Conn. *1911*
Gamble, Philip L., Massachusetts State Col., Dept. of Econ., Amherst, Mass. *1945*
Gambs, John S., 912 S. Stafford St., Arlington, Va. *1939*
Gamser, Howard G., 190 W. 170th St., New York 52, N.Y. *1945*
Gane, Frank H., Northwestern Univ., School of Com., Evanston, Ill. *1934*
Garbuny, Siegfried, 120 W. 105th St., New York, N.Y. *1946*
García Montes, Oscar, Calle C No. 408, entre 17 y 19, Vedado, Havana, Cuba. *1943*
Gardescu, Pauline (Mrs. Scanlon), 1243 30th St., N.W., Washington 7, D.C. *1945*
Gardner, Edward J., 505 First Nat. Bank Bldg., Hamilton, Ohio. *1942*
Gardner, Florence I. (Mrs.), 2185 Bolton St., New York 60, N.Y. *1944*
Gardner, Frances A., 4625 Munger Ave., Dallas, Tex. *1944*
Gardner, H. Robert, 2185 Bolton St., Bronx, New York 60, N.Y. *1944*
Gardner, J. Fred, 361 Olancha Ave., Pittsburgh, 10, Pa. *1942*
Gardner, Kelsey B., 7527 17th St., N.W., Washington 12, D.C. *1924*
Gardner, Walter R., 115 W. Leland St., Chevy Chase 15, Md. *1940*
Garfield, Frank R., 510 Warwick Pl., Somerset, Chevy Chase 15, Md. *1941*
Garis, Roy L., Vanderbilt Univ., Nashville 4, Tenn. *1937*
Garlock, Fred L., 7817 Old Chester Rd., Bethesda, Md. *1930*
Garnsey, Morris E., Univ. of Colorado, Boulder, Colo. *1930*
Garrett, Seymour S., 115 Oak Hill Rd., Ithaca, N.Y. *1921*

Gartley, Russell, 1046 Mapleton Ave., Oak Park, Ill. *1942*

Garver, Earl S., Manchester Col., Dept. of Econ., North Manchester, Ind. *1940*

Garver, Frederic B., Univ. of Minnesota, School of Bus., Minneapolis 14, Minn. *1911*

Garvy, George, 39-20 48th St., Long Island City 4, N.Y. *1944*

Gastaldo, J. Frank, 4279 Katonah Ave., New York, N.Y. *1944*

Gates, William B., 4637 D Lake Park Ave., Chicago, Ill. *1946*

Gaum, Carl G., Rutgers Univ., Univ. Ext. Div., New Brunswick, N.J. *1934*

Gaumnitz, Erwin A., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1945*

Gayer, Arthur D., 456 Riverside Dr., New York, N.Y. *1938*

Gee, Wilson, Univ. of Virginia, School of Rural Econ., Charlottesville, Va. *1923*

Gemmill, Paul F., Univ. of Pennsylvania, 28 Logan Hall, Philadelphia, Pa. *1925*

George, W. D., People's Savings Bank Bldg., Pittsburgh, Pa. *1912*

Gerlando, Peter, 112 Longfellow St., N.W., Washington, D.C. *1943*

Gernand, Arthur C., 2000 Connecticut Ave., Washington, D.C. *1942*

Gerschenkron, Alexander, Bd. of Governors, Fed. Res. System, Washington, D.C. *1943*

Gerstenberg, Charles W., c/o Prentice-Hall, 70 Fifth Ave., New York 11, N.Y. *1910*

Gersting, John M., Northwestern Univ., Dept. of Econ., Harris Hall, Evanston, Ill. *1945*

Gettell, Eunice B. (Mrs. Richard G.), 140 E. 37th St., New York 16, N.Y. *1941*

Gettell, Richard G., 140 E. 37th St., New York 16, N.Y. *1938*

Gibbs, George, Jr., 1546 S. Gramercy Pl., Los Angeles 6, Calif. *1942*

Gibson, Ernest W., Texas Tech. Col., Div. of Com., Lubbock, Tex. *1940*

Gibson, William G. (Ens.), U.S.S. Auk A.M. 57, c/o Fleet Post Office, San Diego, Calif. *1944*

Gideonse, Harry D., 1 Amherst Rd., Great Neck, L.I., N.Y. *1925*

Gideonse, Max, Rutgers Univ., Dept. of Econ., New Brunswick, N.J. *1930*

Giebink, Gilbert G., Chamber of Com., Minneapolis 15, Minn. *1943*

Giffin, Roscoe R., Univ. of Arkansas, Col. of Bus. Admin., Fayetteville, Ark. *1945*

Gifford, Walter S., 195 Broadway, New York, N.Y. *1909*

Gilbert, Donald W., Univ. of Rochester, Dept. of Econ., Rochester, N.Y. *1934*

Gilbert, Hilda K. (Mrs.), 66, TVA Village 1, Sheffield, Ala. *1941*

Gilbert, Horace N., California Inst. of Tech., Pasadena 4, Calif. *1928*

Gilbert, Milton, Bur. of For. and Dom. Com., Washington, D. C. *1939*

Gilbert, Richard V., 2220 N. Quantico St., Arlington, Va. *1945*

Gile, Bueford M., Univ. of Louisiana, Dept. of Agric. Econ., Univ. Sta., Baton Rouge 3, La. *1925*

Gill, Corrington C., 2630 Adams Mill Rd., Washington, D. C. *1928*

Gill, John D., Atlantic Refining Co., 260 S. Broad St., Philadelphia, Pa. *1930*

Gillespie, Jesse R., 1112 Beech St., South Pasadena, Calif. *1928*

Gillett, Roy L., R. D. 1, Delmar, N.Y. *1920*

Gillim, Marion H., Mount Holyoke Col., South Hadley, Mass. *1940*

Gillman, Joseph M., 5396 Earlston Dr., Washington 16, D.C. *1944*

Gilmartin, William M., 1108 Baldwin Ave., Ann Arbor, Mich. *1946*

Gilmore, Eugene A., Jr., 917 18th St., N.W., Washington 6, D. C. *1929*

Gilson, Mary B., Univ. of Chicago, Dept. of Econ., Chicago, Ill. *1931*

Ginsberg, Seymour, 1812 E. 18th St., Brooklyn 29, N.Y. *1944*

Ginsburg, Charles D., 2500 Que St., N.W., Apt. 513, Washington 7, D.C. *1943*

Ginzberg, Eli, Columbia Univ., School of Bus., New York 27, N.Y. *1931*

Ginzburg, Benjamin, 5209 Chevy Chase Pkwy., Washington, D.C. *1938*

Girard, Richard A., New York Univ., Washington Square Col., Dept. of Econ., New York 3, N.Y. *1930*

Gitelson, M. Leo, 845 West End Ave., New York, N.Y. *1924*

Givens, Meredith B., Dept. of Labor, Div. of Place. and Unemp. Ins., 342 Madison Ave., New York, N.Y. *1923*

Glade, Frederic H., New York Univ., School of Com., Washington Sq., New York 3, N.Y. *1942*

Glaeser, Martin G., Univ. of Wisconsin, 314 Sterling Hall, Madison, Wis. *1920*

Glaser, Ezra, 305 E. George Mason Rd., Falls Church, Va. *1938*

Glasser, Israel, 201 W. 54th St., New York 19, N.Y. *1944*

Glassman, Alfred R., 1069 E. 4th St., Brooklyn 30, N.Y. *1937*

Glassman, Sidney, 632 Ashford St., Brooklyn, N.Y. *1946*

Glasson, William H., 710 Buchanan Rd., Durham, N.C. *1940*

Glaves, Cecil R., Illinois Inst. of Tech., 33rd and Federal, Chicago 16, Ill. *1937*

Glenn, John M., 130 E. 22nd St., New York 10, N.Y. *1894*
Glidden, Robert T., 6137 N. Glenwood Ave., Chicago 40, Ill. *1940*
Glocker, Theodore W., Univ. of Tennessee, School of Com., Knoxville, Tenn. *1937*
Glover, Charles A., 515 Upper Mountain Ave., Upper Montclair, N.J. *1925*
Glover, John D., Harvard Univ., Grad. School of Bus. Admin., Baker Lib., Soldiers Field, Boston, Mass. *1940*
Goebel, Richard H., Jr., 615 Prospect St., Westfield, N.J. *1946*
Goehring, E. E., Valparaiso Univ., Valparaiso, Ind. *1946*
Goeltz, J. Donald, 304 Colonial Rd., R. 81, Knoxville, Tenn. *1937*
Goetz, Billy E., President and Whiteman Sts., Yellow Springs, Ohio. *1936*
Goetz, Jacob H., 944 Park Ave., New York 28, N.Y. *1914*
Goff, John H., Box 297, Emory University, Ga. *1942*
Gold, Bela, 3007 N. Pershing Dr., Arlington, Va. *1938*
Gold, Sonia S. (Mrs. Bela), 3007 N. Pershing Dr., Arlington, Va. *1942*
Goldberg, Joseph P., 4083 Minnesota Ave., N.E., Washington 19, D.C. *1944*
Goldberg, Rashelle, 101 W. 80th St., New York, N.Y. *1944*
Goldenberg, Leon, 3517 E. Capitol St., S.E., Washington, D.C. *1936*
Goldenweiser, Emanuel A., Inst. for Advanced Study, Princeton, N.J. *1911*
Goldfield, Edwin D., 5809 6th St., N.W., Washington, D.C. *1941*
Goldhammer, Bernard, 3014 N. E. 30th Ave., Portland 12, Ore. *1940*
Goldner, William, 1530A Hawthorne Ter., Berkeley 8, Calif. *1940*
Goldsen, Joseph M., 1 University Pl., New York, N.Y. *1945*
Goldsmith, Raymond W., 1305 Shepherd St., Washington 11, D.C. *1942*
Goldwasser, Betti C. (Mrs. Ezra Glaser), 305 E. George Mason Rd., Falls Church, Va. *1938*
Goldwater, Melvin, 7 Balfour Pl., Brooklyn 25, N.Y. *1942*
Goley, Beatrice T. (Mrs.), 121 Rittenhouse St., N.W., Washington, D.C. *1945*
Golightly, T. H., National Bank of Commerce, 4010 Madison St., Chicago, Ill. *1941*
Golovin, Nicholas E., 1736 G St., N.W., Washington, D.C. *1941*
Gomberg, William, Int. Ladies' Garment Workers' Union, 1710 Broadway, New York 19, N.Y. *1946*
Gonzalez, Richard J., Humble Oil and Refining Co., 1365 Humble Bldg., Houston, Tex. *1935*
Goodbar, Joseph E., Falmouth, Falmouth Foreside, R.F.D. 6, Portland, Me. *1937*
Goode, Richard B., 1301 15th St., N.W., Apt. 705, Washington 5, D.C. *1941*
Gooden, Orville T., Hendrix Col., Conway, Ark. *1920*
Goodhue, Everett W., Dartmouth Col., Hanover, N.H. *1905*
Goodrich, Carter, Columbia Univ., Fayerweather Hall, New York 27, N.Y. *1921*
Goodwin, Eneas B., Loyola Univ., Dept. of Econ., Chicago, Ill. *1932*
Gooze, Sidney P., c/o Goldman, 855 E. 175th St., Bronx, New York, N.Y. *1945*
Gordman, Howard S., 236 State St., Albany 6, N.Y. *1935*
Gordon, Howard S., c/o W. J. Rowe, Bury, Que., Canada. *1946*
Gordon, Jack, 55 Pineapple St., Brooklyn, N.Y. *1942*
Gordon, Leland J., Denison Univ., Granville, Ohio. *1939*
Gordon, Lincoln, Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1941*
***Gordon,** Louis D., 43 Sierra St., Rm. 11, Reno, Nev. *1916*
Gordon, Margaret S. (Mrs. Robert A.), 45 San Mateo Rd., Berkeley 7, Calif. *1943*
Gordon, Monte J., Stratford Arms Hotel, 117 W. 70th St., New York 23, N.Y. *1942*
Gordon, Nathan N., 4314 4th St., N., Arlington, Va. *1945*
Gordon, Robert A., 45 San Mateo Rd., Berkeley 7, Calif. *1936*
Gordon, Wendell C., 1113 Kenwood Ave., Houston, Tex. *1941*
Gorski, Roman von S., 310 W. 55th St., Apt. 5A, New York 19, N.Y. *1932*
Goss, Bert C., 610 Shoreham Bldg., Washington 5, D.C. *1941*
Gostomski, Adam, 65 Broadway, 16th Fl., New York 6, N.Y. *1945*
Gotschall, John C., 400 Font Blvd., Parkmerced, San Francisco 12, Calif. *1946*
Gott, Philip P., 1 N. La Salle St., Chicago 2, Ill. *1941*
Gottsegen, Jack J., 2333 Huidekoper Pl., N.W., Washington 7, D.C. *1934*
Goudriaan, Jan, Bachlaan 18, Hilversum, Holland. *1935*
Gould, Joseph S., 24 Kent Way, Newark, Del. *1930*
Gourrich, Paul P., 3337½ Wilshire Blvd., Los Angeles 5, Calif. *1940*
Gourvitch, Alexander, 5023 N. Capitol St., Washington 11, D.C. *1926*

Gow, J. Steele, Maurice and Laura Falk Found., Farmers Bank Bldg., Pittsburgh 22, Pa. *1935*
Graber, Annette, 87 Columbia St., New York 2, N.Y. *1946*
Grady, Eleanor H. (Mrs.), Hunter Col., Park Ave. and 68th St., New York, N.Y. *1921*
Grady, Henry F., American President Lines, 311 California St., San Francisco, Calif. *1927*
Graham, Benjamin, 52 Wall St., New York, N.Y. *1934*
Graham, Frank D., 214 Western Way, Princeton, N.J. *1921*
Graham, Herman D., 305 W. Green St., Champaign, Ill. *1946*
Graham, John J., 7 Court St., West Haven 16, Conn. *1944*
Graham, T(hompson) Bertrand, Metropolitan Life Insurance Co., New York, N.Y. *1917*
Grajdanzev, Andrew J., Gov. Sec., GHQ, SCAP, A.P.O. 500, c/o Postmaster, San Francisco, Calif. *1946*
Grampp, William D., De Paul Univ., Col. of Com., 64 E. Lake St., Chicago 1, Ill. *1944*
Gras, Norman S. B., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1918*
Graue, Erwin, Univ. of Idaho, Moscow, Idaho. *1930*
Graves, Richard A., Univ. of Minnesota. 204 Vincent Hall, Minneapolis 14, Minn. *1945*
Gray, Edith S., U. S. Children's Bur., Washington, D.C. *1912*
Gray, Edward R., 3501 Williamsburg Lane, N.W., Washington, D.C. *1925*
Gray, Horace M., Univ. of Illinois, Col. of Com., Dept. of Econ., Urbana, Ill. *1923*
Gray, Laurence R., Univ. of Arizona, Dept. of Econ., Tucson, Ariz. *1941*
Gray, Robert H., 35 Claremont Ave., New York, N.Y. *1944*
Grebler, Leo, NHA, Office of Administrator, 1600 Eye St., N.W., Washington, D.C. *1944*
Greef, Albert O., c/o Fred Greef, 1016 S. Walnut St., Pittsburg, Kans. *1924*
Green, Paul M., 300 N. Granada St., Arlington, Va. *1928*
Greenbaum, Howard H., 209-46 110th Ave., Queens Village 9, N.Y. *1944*
Greene, Catharine D. (Mrs. A. E.), 1400 Hawthorne Ter., Berkeley 8, Calif. *1928*
Greenspan, Benjamin, 345 Madison Ave., New York, N.Y. *1944*
Greenway, J. Cole, 30 Vesey St., New York, N.Y. *1942*
Gregg, Ronald E., Municipal League of Toledo, 312 Colton Bldg., Toledo, Ohio. *1942*
Gregory, Paul M., Univ. of North Carolina, Woman's Col., Greensboro, N.C. *1940*
Gregory, William L., 4915 Delmar Blvd., St. Louis 8, Mo. *1934*
Greig, Gertrud B., Wellesley Col., Wellesley 81, Mass. *1944*
Gresham, Harold D., American Embassy, Tehran, Iran. *1932*
Grether, Ewald T., Univ. of California, Econ. Dept., Berkeley, Calif. *1923*
Grey, Alfred, 520 W. 110th St., New York, N.Y. *1946*
Grey, Clara K., 122 Schaeffer St., Brooklyn, N.Y. *1944*
Griffenhagen, Edwin O., 1100 Lake Shore Dr., Chicago 11, Ill. *1912*
Griffin, Albert, Emory University, Ga. *1934*
Griffin, Arthur G., Davidson Col., Davidson, N.C. *1927*
Griffin, Clare E., Univ. of Michigan, School of Bus. Admin., Ann Arbor, Mich. *1920*
Griffin, John I., 115 Henry St., Brooklyn 2, N.Y. *1936*
Griffith, E. C., Univ. of Georgia, Col. of Bus. Admin., Athens, Ga. *1943*
Grimes, Waldo E., Kansas State Agric. Col., Manhattan, Kans. *1919*
Groat, George G., Univ. of Vermont, Burlington, Vt. *1903*
Grodinsky, Julius, Univ. of Pennsylvania, 104 Hare Bldg., Philadelphia 4, Pa. *1941*
Grokë, Paul O., Yale Univ., 213 Strathcona Hall, New Haven, Conn. *1944*
Gromfine, Isadore J. (Cpl.), Sq. D, 902 AAFBU, Statis. Control, AFTAC, Orlando, Fla. *1945*
Gross, Bertram M., 613 S. Quincy St., Arlington, Va. *1941*
Grosscup, George C., Jr., 312 N. Prospect Ave., Madison, Wis. *1946*
Grosse, Robert N., 35-16 76th St., Jackson Heights, L.I., N.Y. *1946*
Grove, Ernest W., 3928 Benton St., N.W., Washington 7, D.C. *1940*
Groves, Harold M., Univ. of Wisconsin, Dept. of Econ., Madison 6, Wis. *1926*
Grubbs, W. M., 705 Faculty St., Boone, N.C. *1943*
Gruchy, Allan G., Univ. of Maryland, Dept. of Econ., College Park, Md. *1937*
Gruen, Berta A. (Mrs. Edward D.), 1229 Noyes Dr., Silver Spring, Md. *1944*
Gruen, Edward D., 1229 Noyes Dr., Silver Spring, Md. *1941*
Grunberg, Emile, 72 Park Ter. W., New York 34, N.Y. *1942*
Gruning, Charles H., P. O. Box 62, Mystic, Conn. *1927*
Guest, Harold W., Baker Univ., Baldwin, Kans. *1922*
Guild, Lawrence R., 40 Hazel Dr., Pittsburgh, Pa. *1926*

Gulick, Charles A., Univ. of California, 119 South Hall, Berkeley, Calif. *1923*
Gumperz, Julian, 610 Fifth Ave., Rm. 603, New York 20, N.Y. *1934*
Gunin, Sergei T., 2716 29th St., S.E., Washington 20, D.C. *1944*
Gunn, Grace T., 1731 20th St., N.W., Washington 9, D.C. *1944*
Gunnarson, Arthur B., Nat. Asso. of Cost Accountants, 385 Madison Ave., New York 17, N.Y. *1925*
Gunz, Martin K., 136 W. 75th St., New York 23, N.Y. *1944*
Gutchess, Franklin J., 1665 34th St., N W., Washington 7, D.C. *1945*
Guthmann, Harry G., Northwestern Univ., Evanston, Ill. *1919*
Guthrie, John A., State Col. of Washington, School of Bus. Admin., Pullman, Wash. *1941*
Gutman, Franz, Univ. of North Carolina, Chapel Hill, N.C. *1939*
Guyton, Percy L., Northwestern Univ., Harris Hall 306, Evanston, Ill. *1945*
Guzik, Leo, 32 Broadway, New York, N.Y. *1944*
Gwaltney, Bernita, American Bankers Asso., 22 E. 40th St., New York 16, N.Y. *1945*

Haas, Francis J., 2006 Lake Dr., S.E., Grand Rapids, Mich. *1940*
Haas, George C., Treasury Dept., Washington, D.C. *1936*
Haber, William, Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1941*
Haberler, Gottfried, 326 Littauer Center, Cambridge 38, Mass. *1928*
Hacker, Emanuel A., 15 N. Princeton Circle, Lynchburg, Va. *1940*
Hacker, Louis M., Columbia Univ., New York 27, N.Y. *1934*
Hadjidotou, Tasso, 77 rue Charles Degroux, Brussels 4, Belgium. *1946*
Hadley, Clausin D., 3851 Guilford Ave., Indianapolis 5, Ind. *1936*
Haensel, Paul, 406 Amelia St., Fredericksburg, Va. *1931*
Hagedorn, George G., 194-26 116th Ave., St. Albans, N.Y. *1940*
Hagen, Everett E., 7015 Fordham Ct., College Park, Md. *1938*
Hagios, J. Anton, Broad Street Asso., 744 Broad St., Newark 2, N.J. *1944*
Hahn, L. Albert, 830 Park Ave., New York, N.Y. *1943*
Hahne, Ernest H., Miami Univ., Oxford, Ohio. *1912*
Haig, Robert M., Columbia Univ., School of Bus., New York 27, N.Y. *1911*
Haines, Clarence H., c/o Harvard Trust Co., Cambridge, Mass. *1944*
Haines, George H., Miami Univ., Oxford, Ohio. *1938*
Haines, Walter W., Butterworth Farm, Foster, Ohio. *1944*
Halaas, Eugene T., Univ. of Maryland, Col. of Bus. and Pub. Admin., College Park, Md. *1935*
Hald, Earl C., 258 Hillcrest Rd., Berkeley 5, Calif. *1939*
Haldeman, C. W., American Univ., Washington, D.C. *1944*
Hale, E(dward) Everett, Univ. of Texas, Austin 12, Tex. *1927*
Hale, Robert L., Columbia Univ., New York 27, N.Y. *1911*
Hales, Charles A., 1839 13th Ave., Greeley, Colo. *1936*
Haley, Bernard F., Dept. of Econ., Stanford University, Calif. *1926*
Haley, Robert M., Geneva Col., Beaver Falls, Pa. *1941*
Hall, Challis A., Jr., c/o W. E. Hegberg, 924 S. Hickory, Ottawa, Kans. *1938*
Hall, Franklin P., 4830 29th St., S., Arlington, Va. *1940*
Hall, James K., 12233 12th St., N.W., Seattle 77, Wash. *1930*
Hall, Sherman M., Consolidated Edison Co., 4 Irving Pl., New York 3, N.Y. *1941*
Hall, Willard S., 318 E. Noleman St., Centralia, Ill. *1929*
Hall, W(illiam) Scott, 103 Irvine Rd., Lexington, Ky. *1929*
Hallaner, Frank J., 3819 Jenifer St., N.W., Washington 15, D.C. *1944*
Haller, William, Jr., R.F.D. 2, Southbridge, Mass. *1940*
Halley, Donald M., Tulane Univ., Col. of Com. and Bus. Admin., New Orleans 15, La. *1925*
Hallowell, Burton C., Box 158, Wesleyan Sta., Middletown, Conn. *1940*
Hallowell, Elmer W., 125 Forrester St., S.W., Washington 20, D.C. *1945*
Halm, George N., Tufts Col., Medford, Mass. *1937*
Halvorson, Lloyd C., National Grange, 744 Jackson Pl., Washington 6, D.C. *1946*
Ham, William T., 5101 Chevy Chase Pkwy., N.W., Washington, D.C. *1925*
Hamilton, Earl J., 2010 Sheridan Rd., Evanston, Ill. *1929*
Hamilton, Edward P., 440 Fourth Ave., New York, N.Y. *1924*
Hamilton, Roger S., Northeastern Univ., Boston, Mass. *1935*
Hamilton, Thomas R., Box 204, Faculty Exchange, College Station, Tex. *1923*
Hamilton, Walton H., Yale Univ., Law School, New Haven, Conn. *1916*

Hammar, Conrad H., Univ. of Missouri, Dept. of Agric. Econ., Columbia, Mo. *1946*
Hammer, Milton, 909 Gist Ave., Silver Spring, Md. *1944*
Hammer, Robert B., 49 Claverly Hall, Cambridge 38, Mass. *1943*
Hammerman, Herbert, 1701 16th St., N.W., Washington 9, D.C. *1946*
Hammond, Seth, 101 N. Busey Ave., Urbana, Ill. *1938*
Hampel, Louis F., United Air Lines, 231 S. La Salle St., Rm. 1610 ,Chicago 4, Ill. *1942*
Hance, Wendell D., Cherry St., R.F.D. 1, Middleboro, Mass. *1944*
Hancock, Glover D., Washington and Lee Univ., Lexington, Va. *1908*
Hand, George H., Fairmont State Col., Fairmont, W.Va. *1934*
Handsaker, Morrison, 5002 La Roda Ave., Los Angeles 41, Calif. *1938*
Handy, Walter K., Jr., Epping Forest, Box 87, R.F.D. 1, Annapolis, Md. *1939*
Hanellin, Harriet J., Hancock Hall, 3665 38th St., N.W., Washington 16, D.C. *1943*
Haney, Lewis H., 90 Trinity Pl., New York 6, N.Y. *1906*
Haney, Paul E., 1000 Chandler Bldg., Washington 5, D.C. *1940*
Hanna, Frank A., 7 Woodland Dr., R. R. 2, Falls Church, Va. *1944*
Hansen, Alvin H., Harvard Univ., Grad. School of Pub. Admin., Cambridge 38, Mass. *1919*
Hansen, Wesley J., Windham, Conn. *1944*
Hanson, Alice C. (Mrs. Homer Jones), 3067 Ordway St., N.W., Washington 8, D.C. *1925*
Hanson, Arthur W., Morgan Hall 219, Soldiers Field, Boston, Mass. *1924*
Haraldson, Wesley C., Fed. Res. Bd., Washington, D.C. *1942*
Harbeson, Robert W., 3408 Gunston Rd., Alexandria, Va. *1927*
Harbison, Frederick H., 5708 Kenwood Ave., Chicago 37, Ill. *1939*
Harcourt, Alfred, R. 1, Box 155, Riverside, Conn. *1942*
Hardin, Rector R., Berea Col., Berea, Ky. *1943*
Hardy, Charles O., Fed. Res. Bank, Kansas City, Mo. *1919*
Hardy, Harold E., 2024 Commonwealth Ave., Apt. A21, St. Paul 8, Minn. *1943*
Haring, H(arry) Albert, Indiana Univ., School of Bus., Bloomington, Ind. *1928*
Harlan, Charles L., U. S. Dept. of Agric., Div. of Agric. Statis., Washington, D.C. *1920*
Harper, F. A., Cornell Univ., Dept. of Agric. Econ., Warren Hall, Ithaca, N.Y. *1945*
Harrell, Samuel R., Jordan Hall, Rm. 205, 46th and Sunset Ave., Indianapolis 7, Ind. *1941*
Harrigan, Arthur W., Jr., 138 Denhoff Ave., Freeport, L.I., N.Y. *1943*
***Harriman,** Edward A., 1226 E. Foothill Blvd., Altadena, Calif. *1914*
Harris, Abram L., Howard Univ., Washington, D.C. *1934*
Harris, Frank, c/o G. Kofsky, 83 Oak St., Hartford 6, Conn. *1943*
Harris, Katherine S. (Mrs.), 1232 17th St., N.W., Washington, D.C. *1943*
Harris, Seymour E., Four Winds Farm, West Acton, Mass. *1926*
Harris, W. Carlton, Logan Hall, 36th and Woodland Ave., Philadelphia, Pa. *1925*
Harrison, George M., 701 Brotherhood Bldg., Cincinnati, Ohio. *1942*
Harrison, Robert W., R.F.D. 1, Wilmore, Ky. *1945*
§**Harrison,** Shelby M., 130 E. 22nd St., New York, N.Y. *1933*
Harriss, C(lement) Lowell, Columbia Univ., Dept. of Econ., New York 27, N.Y. *1937*
Hart, Albert G., c/o C.E.D., 1313 E. 60th St., Chicago, Ill. *1936*
Hart, Donald J., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1942*
Hart, Lawrence, 2335 Valentine Ave., New York, N.Y. *1940*
Hart, Maurice I., 19 Bonnett, Larchmont, N.Y. *1939*
Hart, Orson H., R.F.D., Andrews St., Southington, Conn. *1937*
Hartkemeier, Harry P., Univ. of Missouri, 114 Bus. and Pub. Admin. Bldg., Columbia, Mo. *1942*
Hartland, Penelope C., 39 Case Ave., Eden Park, R.I. *1943*
Hartley, Arthur E., 15 Kingston St., Subiaco, Western Australia. *1946*
Hartley, Eugene F., 590 Madison Ave., New York, N.Y. *1941*
Hartogensis, Alwyn M., 166 Melrose Pl., Ridgewood, N.J. *1945*
Harvey, Edward F., 7319 Elbow Lane, Mt. Airy, Philadelphia 19, Pa. *1943*
Harvill, Richard A., 1326 E. Mabel St., Tucson, Ariz. *1933*
Hasbrouck, Henry C., 88 Douglas Rd., Glen Ridge, N.J. *1911*
Hasek, Carl W., 502 E. Foster Ave., State College, Pa. *1922*
Hasse, Adelaide R., 806 Islington St., Silver Spring, Md. *1914*
Hassell, Edward W., 4112 N. Henderson Rd., Arlington, Va. *1943*
Hastings, Hudson B., 6 Everit St., New Haven, Conn. *1920*
Hatfield, George W., North Plain, Conn. *1937*

*Hathaway, Frank R., 142 Green St., Hudson, N.Y. *1888*

Hauge, Gabriel S., 134 Mt. Auburn St., Cambridge 38, Mass. *1946*

Hauhart, William F., 904 N. Rock Hill Rd., Webster Groves 19, Mo. *1920*

Haun, George C., 6410 Regent St., Oakland 9, Calif. *1944*

Hauser, Philip M., Bur. of the Census, Washington 25, D.C. *1945*

Havens, R. Murray, P. O. Box 1609, University, Ala. *1938*

Havlik, Hubert F., 3850 39th St., N.W., Washington 7, D.C. *1941*

Hawes, Harry B., 711 Transportation Bldg., Washington, D.C. *1934*

Hawk, Emory Q., Birmingham-Southern Col., Birmingham, Ala. *1941*

Hawkes, George R., 3217 Vine St., Lincoln 3, Neb. *1946*

Hawkins, Everett D., c/o R. R. Hawkins, USMS Training Sta., Personnel Dept., Sheepshead Bay, Brooklyn, N.Y. *1930*

Hawkinson, James R., North Shore Hotel, Evanston, Ill. *1927*

Hawley, Langston T., 19 Cobb Ter., Chapel Hill, N.C. *1945*

Haworth, Clifford L., 1050 Elm St., Winnetka, Ill. *1929*

Hayden, Byron R., 1301 S. Cleveland St., Apt. 353, Arlington, Va. *1942*

Hayes, H(arry) Gordon, Ohio State Univ., Col. of Com., Columbus 10, Ohio. *1915*

Hayes, James L., St. Bonaventure Col., St. Bonaventure, N.Y. *1941*

Hayes, Marion, 1712 16th St., N.W., Washington 9, D.C. *1939*

Hayes, Samuel P., Jr., 1346 Midland Ave., Bronxville 8, N.Y. *1938*

Haynes, Lawrence W., R. R. 3, Box 296, Kokomo, Ind. *1942*

Haynes, Williams, Stonecrop Farm, Stonington, Conn. *1924*

Hazlitt, Henry, 37 Washington Sq., W., New York, N.Y. *1946*

Healy, James J., NWLB, 209 Washington St., Boston 8, Mass. *1938*

Healy, Kent T., 245 Lawrence St., New Haven 11, Conn. *1932*

Heaney, Norman S., 217 Cedarbrook Rd., Ardmore, Pa. *1942*

Heath, Milton S., Univ. of North Carolina, Dept. of Econ. and Com., Chapel Hill, N.C. *1940*

Heatherington, Donald F., Richmond, Vt. *1938*

Heaton, Herbert, Univ. of Minnesota, Minneapolis 14, Minn. *1926*

Heck, Harold J., Loyola Univ. of the South, New Orleans 15, La. *1944*

‡**Heckscher**, Eli F., Baldersgatan 10A, Stockholm ö, Sweden. *1938*

Hedges, J(oseph) Edward, Indiana Univ., School of Bus., Bloomington, Ind. *1932*

Hedges, Marion H., Int. Brotherhood of Electrical Workers, 1200 15th St., N.W., Washington, D.C. *1942*

Heebner, R. Gilbert, Scott Paper Co., Chester, Pa. *1941*

Heer, Clarence, Univ. of North Carolina, Chapel Hill, N.C. *1934*

Hefferman, Marion C. (Mrs. J. V.), 340 Riverside Dr., New York, N.Y. *1931*

Heflebower, Richard B., 3254 Arcadia Pl., N.W., Washington 15, D.C. *1934*

Heiby, Ernest P., 1217 Delafield Pl., N.W., Washington, D.C. *1941*

Heilperin, Michael A., 630 Fifth Ave., Rm. 1260, New York 20, N.Y. *1934*

Heim, Peggy, Ohio State Univ., Commerce Bldg., Columbus 10, Ohio. *1945*

Heinemann, Hans, Kidder, Peabody and Co., 17 Wall St., New York, N.Y. *1941*

Helbing, Albert T., 1410 N. Louise St., Glendale 7, Calif. *1930*

Helfant, Henry, Casilla 9582, Santiago de Chile, South America. *1946*

Heller, Walter W., Treasury Dept., Div. of Tax Res., Washington, D.C. *1941*

Hellman, Richard, 4115 W St., N.W., Washington 7, D.C. *1941*

Helm, Florence, 1725 New Hampshire Ave., N.W., Washington 9, D.C. *1930*

Helmreich, Theodore C., De Pauw Univ., Box 111, Greencastle, Ind. *1946*

Helms, Lloyd A., Bowling Green State Univ., Bowling Green, Ohio. *1927*

Henderson, Leon, 2119 Bancroft Pl., Washington, D.C. *1935*

Henderson, Lucien G., Ronald Press Co., 15 E. 26th St., New York, N.Y. *1919*

Heneman, Herbert G., 1733 Blair St., St. Paul 4, Minn. *1941*

Hengren, Raymond E., 6605 Exfair Rd., Bethesda, Md. *1935*

Henig, Harry, 1160 Cromwell Ave., New York 52, N.Y. *1934*

Henle, Peter, 3201 Ravensworth Pl., Alexandria, Va. *1946*

Henry, John M., Coe Col., Cedar Rapids, Iowa. *1923*

Henry, Robert J., 3707 Three Mile Dr., Detroit 24, Mich. *1929*

Herbert, Carl P., St. Paul Bur. of Municipal Res., Athletic Club Bldg., St. Paul, Minn. *1943*

Herbert, Charles H., Sun Life Assurance Co. of Canada, Montreal, Que., Canada. *1937*

Herbst, Alma, Ohio State Univ., Columbus 10, Ohio. *1924*
Hermens, F. A., 1721 Stocker Pl., South Bend, Ind. *1938*
Hernandez, Jaime, 1617 Massachusetts Ave., N.W., Washington, D.C. *1943*
Herrmann, Helen, R. D. 1, Freehold, N.J. *1928*
Herrold, Lloyd D., 2210 Hartzell St., Evanston, Ill. *1938*
Herschman, Oscar, 1125 Sterling Pl., Brooklyn 13, N.Y. *1945*
Hersey, Arthur B., 807 Chalfonte Dr., Alexandria, Va. *1943*
Hersey, M. Leonard, 44 W. 10th St., New York 11, N.Y. *1939*
Hershman, Ceil, 69 W. 90th St., New York 24, N.Y. *1945*
Herson, Richard J. L., 33 W. 42nd St., New York 18, N.Y. *1944*
Herz, Henry, 57 Ardsley Rd., Montclair, N.J. *1941*
Herzel, William G., 12 Montrose Pk., Frankfort, Ky. *1944*
Heskin, Oscar E., c/o K. Wick, Park River, N.D. *1939*
§**Hess,** Herbert W., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1940*
Hess, Ralph H., Cobleskill, N.Y. *1944*
Heuser, Heinrich K., 304 River Dr., Appleton, Wis. *1942*
Heusner, W. W., Pabst Sales Co., 221 N. La Salle St., Chicago 1, Ill. *1945*
Hewes, Amy, Mount Holyoke Col., South Hadley, Mass. *1906*
Hewett, William W., Univ. of Cincinnati, Dept. of Econ., Cincinnati, Ohio. *1921*
Hexner, Ervin, Post Box 1073, Chapel Hill, N.C. *1940*
Hiatt, Amos, 15 Edgemont Ave., Summit, N.J. *1940*
Hibbard, Benjamin H., Col. of Agric., Madison, Wis. *1908*
Hibbs, James R., c/o L. J. Darter, 8909 Grant St., Bethesda, Md. *1940*
Hickman, C. Addison, 312C University Hall, Iowa City, Iowa. *1946*
Hickman, W(alter) Braddock, Nat. Bur. of Econ. Res., 254th and Independence Ave., New York 63, N.Y. *1940*
Hicks, Clifford M., Univ. of Nebraska, Lincoln, Neb. *1934*
Hicks, William T., Quaker Lane, Alexandria, Va. *1935*
Hidy, Muriel E. (Mrs. R. W.), Wheaton Col., Norton, Mass. *1932*
Higdon, Earl T., 517½ Francis St., St. Joseph, Mo. *1941*
***Hijakata,** S., 47 Ichibancho, Kojimachi-ku, Tokyo, Japan. *1921*
Hildebrand, George H., Jr., 698 16th St., Oakland, Calif. *1939*
Hildreth, Clifford G., Iowa State Col., Econ. Dept., Ames, Iowa. *1944*
Hilgerdt, Folke, League of Nations, Princeton, N.J. *1943*
Hilken, Henry G., 401 Elm St., Chevy Chase 15, Md. *1941*
Hill, Daniel A., 1633 Compton Rd., Cleveland Heights, Ohio. *1931*
Hill, George B., 618 N. Lucerne Blvd., Los Angeles 4, Calif. *1923*
Hill, James C., 1121 Fresno Ave., Berkeley, Calif. *1940*
Hill, Sanuel S., Jr., 1541 Colonial Ter., Arlington, Va. *1943*
Hillhouse, Albert M., 226 N. 4th St., Danville, Ky. *1941*
Hilton, Howard, Jr., 3908 N. 5th St., Apt. 2, Arlington, Va. *1942*
Himadeh, Sa'id Behmed, American Univ., Beirut, Lebanon. *1928*
Himmelblau, David, 337 E. Chicago Ave., Chicago Ave. Sta., Chicago, Ill. *1914*
Himmelfarb, Milton, 1967 81st St., Brooklyn 14, N.Y. *1946*
Hinman, Albert G., Principia, St. Louis, Mo. *1934*
Hinrichs, Albert F., U. S. Bur. of Labor Statis., Washington, D.C. *1935*
Hinshaw, Randall W., McLean Gardens, Benning Hall, 3445 38th St., N.W., Washington, D.C. *1940*
Hirsch, Edith (Mrs. Julius), 545 West End Ave., Apt. 161, New York, N.Y. *1944*
Hirsch, Julius, 545 West End Ave., Apt. 161, New York, N.Y. *1944*
Hirsch, Melvin L., 328 New York Ave., Brooklyn 13, N.Y. *1942*
Hirsch, S. Siegfried, 3213 Jocelyn St., N.W., Washington 15, D.C. *1944*
Hitch, Charles J., Queen's Col., Oxford, England. *1945*
Hitch, Thomas K., 3930 Langley Ct., N.W., Washington 16, D.C. *1942*
Hjelmstad, J. H., 416 S. Seventh St., Moorhead, Minn. *1934*
Hoadley, Walter E., Jr., 1588 Oak Ave., Evanston, Ill. *1942*
Hoag, C. G., 619 Walnut Lane, Haverford, Pa. *1943*
Hoag, Pierre, Eastman Kodak Co., Kodak Park, Rochester, N.Y. *1940*
Hoagland, Henry E., 2448 Southway Dr., Columbus, Ohio. *1910*
Hobart, George H., 626 Hamilton St., N., High Point, N.C. *1943*
Hobbah, Reginald V., 8417 Woodcliff Ct., Silver Spring, Md. *1946*

Hobson, Asher, Univ. of Wisconsin, Col. of Agric., Madison, Wis. *1920*
Hoch, Minnie B. (Mrs. Myron L.), 1301 Saratoga Ave., N.E., Washington, D.C. *1945*
Hoch, Myron L., 1301 Saratoga Ave., N.E., Washington, D.C. *1944*
Hochwald, Werner, Washington Univ., Dept. of Econ., St. Louis, Mo. *1942*
Hodges, Edward P., 2222 Que St., N.W., Apt. 53, Washington, D.C. *1944*
Hodges, John R., Univ. of Kansas City, Kansas City 4, Mo. *1938*
Hodges, Julian A., Kansas State Agric. Col., Manhattan, Kans. *1928*
Hodgkins, Alton R., Tulane Univ., Newcomb Memorial Col., New Orleans, La. *1926*
Hoeber, Francis P., Econ. Div., Trade and Com. Br., Office of Military Gov. for Germany (U.S.), A.P.O. 742, c/o Postmaster, New York, N.Y. *1943*
Hoeniger, Heinrich, 110 Morningside Dr., Apt. 26, New York 27, N.Y. *1943*
Hoffenberg, Marvin, 1400 M St., N.W., Washington 5, D.C. *1943*
Hoffman, G(eorge) Wright, Univ. of Pennsylvania, Dept. of Insurance, Philadelphia 4, Pa. *1920*
Hogan, Thomas E., 25 Holt Pl., Takoma Park 12, Md. *1943*
Hogan, William T., Woodstock Col., Woodstock, Md. *1945*
Hohé, Hubert G., 63 Wall St., New York, N.Y. *1942*
Hohman, Elmo P., 625 Haven, Evanston, Ill. *1936*
Hoiberg, Otto G., South Dakota State Col., Rural Sociology Dept., Brookings, S.D. *1943*
Hoisington, Elizabeth C., c/o Nat. City Bank, Statis. Dept., 55 Wall St., New York 15, N.Y. *1946*
Hoisington, Frederick R., Jr., c/o Nat. City Bank, Statis. Dept., 55 Wall St., New York 15, N.Y. *1935*
Holben, Ralph E., 1 River Ridge Rd., Hanover, N.H. *1942*
Holden, Arthur C., 570 Lexington Ave., New York, N.Y. *1942*
Holder, Frederick C., Kirby Rd., R.F.D. 2, Falls Church, Va. *1939*
Holdsworth, John T., Univ. of Miami, Coral Gables, Fla. *1903*
Holladay, James, Univ. of Alabama, School of Com., University, Ala. *1929*
Hollander, Leona R. (Mrs.), 14 Washington Pl., New York, N.Y. *1942*
Holley, Julian L., 2700 Que St., N.W., Washington 7, D.C. *1940*
Holloway, Charles W., 1516 16th Rd., N., Arlington, Va. *1941*
Hollowell, Walter M., 2388 Albion St., Denver, Colo. *1939*
Holm, Edwin E., Jr., R. 1, Lynnhaven, Va. *1944*
Holman, Wayne J., Jr., 944 Kensington Ave., Plainfield, N.J. *1944*
Holmes, Floyd C., 4121 W St., N.W., Washington, D.C. *1934*
Holthausen, Duncan M., 86 Bluff Rd., Palisade, N.J. *1939*
Homan, Paul T., Cornell Univ., Ithaca, N.Y. *1925*
Homberger, Ludwig M., American Univ., 1901 F St., N.W., Washington, D.C. *1939*
Hon, Ralph C., 4418 Chestnut, Philadelphia, Pa. *1928*
Hong, Everette N., Syracuse Univ., Dept. of Econ., Maxwell Hall, Syracuse, N.Y. *1940*
Honnold, Junia H., Buckingham, Apt. 4, 229 N. Piedmont St., Arlington, Va. *1930*
Hooks, Janet M. (Mrs. V. Lewis Bassie), 3908 S. 7th St., Arlington, Va. *1944*
Hoos, Sidney, Univ. of California, Giannini Found., Berkeley, Calif. *1939*
Hoot J(ohn) Weldon, Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1946*
Hoover, Calvin B., Duke Univ., Econ. Dept., Durham, N.C. *1925*
Hoover, Edgar M., Jr., 920 Lincoln Ave., Ann Arbor, Mich. *1933*
Hoover, Glenn E., Mills Col., Dept. of Econ., Mills College P. O., Calif. *1925*
Hope, John, II, Fisk Univ., Soc. Sci. Inst., Nashville 8, Tenn. *1938*
Hopf, Harry A., Hopf Inst. of Management, Windrose Farm, R.F.D., Ossining, N.Y. *1940*
Hopkins, Ernest J., 1319 N. Pierce St., Arlington, Va. *1946*
Hopkins, Francis W., 221 Harrison Ave., Highland Park, N.J. *1927*
Hopkins, John A., Jr., 906 S. Washington St., Apt. 105, Alexandria, Va. *1922*
Hopkins, Kenneth B., 420 Lexington Ave., New York 17, N.Y. *1945*
Hopkins, William S., Dept. of Econ., Stanford University, Calif. *1934*
Horak, Jacob, 9608 Kensington Pkwy., Kensington, Md. *1929*
Horne, Gilbert R., 333 Patricia Rd., Windsor, Ont., Canada. *1933*
Horne, Roman L., 4202 Vacation Lane, Arlington, Va. *1935*
Horner, Robert R., 838 North Shore Dr., Holland, Mich. *1929*
Horner, Seward L., General Motors Corp., 1775 Broadway, New York 19, N.Y. *1923*
Horowitz, Daniel L., Dept. of State, Mailing Div., Washington, D.C. *1942*
Horowitz, Morris A., 2 Ridge Rd., S.E., Washington 2, D.C. *1944*

Horsch, Alfred C., Pitman Pub. Corp., 2 W. 45th St., New York 19, N.Y. *1946*
Horton, Donald C., Dept. of Agric., Bur. of Agric. Econ., Div. of Agric. Fin., Washington, D.C. *1926*
Hoselitz, Bert F., Univ. of Chicago, Dept. of Econ., Chicago 37, Ill. *1943*
Hosmer, Windsor A., Harvard Univ., Grad. School of Bus. Admin., 215 Morgan Hall, Soldiers Field, Boston, Mass. *1929*
Hotchkiss, George B., New York Univ., Washington Sq., New York 3, N.Y. *1941*
Hotchkiss, Hervey D., 165 Woodland Ave., New Rochelle, N.Y. *1939*
Hotchkiss, Willard E., 2207 Homet Rd., San Marino 8, Calif. *1902*
Hottenstein, Marcus S., Lincoln Bldg., 60 E. 42nd St., New York, N.Y. *1922*
Houchins, Joseph R., 4919 Just St., N.E., Washington 19, D.C. *1937*
Hough, Louis S., Miami Univ., Oxford, Ohio. *1944*
Houston, G. Sidney, First Service Corp., St. Paul, Minn. *1936.*
***Houston,** Samuel F., 512 Real Estate Trust Bldg., Philadelphia, Pa. *1888*
Hovde, Howard T., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston 63, Mass. *1934*
Howard, Bion B., 4607 Connecticut Ave., N.W., Washington 8, D.C. *1941*
Howard, Charles H., 65 Broad St., Rm. 717, Rochester, N.Y. *1923*
Howard, Edwin H., 419 Janette Ave., S .W, Roanoke, Va. *1925*
Howard, Gordon E., 5521 S. Blackstone Ave., Chicago, Ill. *1945*
Howard, Jack A., 48 Shepard St., Cambridge, Mass. *1944*
Howard, Sister Jane Mary, Marygrove Col. Lib., Detroit 21, Mich. *1945*
Howard, John B., U. S. Tariff Com., Washington 25, D.C. *1945*
Howard, Martha C., 25 Claremont Ave., Apt. 11A, New York 27, N.Y. *1946*
Howard, Stanley E., 105 FitzRandolph Rd., Princeton, N.J. *1912*
Howard, T. Levron, "Bush Lodge," Kirkwood Ave., Knoxville 15, Tenn. *1938*
Howell, Paul L., Northwestern Univ., School of Com., Evanston, Ill. *1946*
Howell, Philip L., Hendrix Col., Conway, Ark. *1936*
Howenstine, E. Jay, U. S. Dept. of Agric., Bur. of Agric. Econ., Washington, D.C. *1944*
Howey, Richard S., Univ. of Kansas, 106 Admin. Bldg., Lawrence, Kans. *1930*
Hoyt, Elizabeth E., Iowa State Col., Ames, Iowa. *1925*
Hoyt, Homer, 12 West Dr., Larchmont, N.Y. *1936*
Hubbard, Joseph B., 25 Summit Rd., Verona, N.J. *1914*
Hubbard, Joshua C., Old Connecticut Path, Wayland, Mass. *1942*
Huber, John R., Univ. of Washington, Col. of Econ. and Bus., Seattle, Wash. *1934*
Huber, Milton L., B. W. Dyer and Co., 120 Wall St., New York 5, N.Y. *1941*
Hudson, Hersel W., 603 Vine St., Kent, Ohio. *1929*
Hudson, Philip G., 921 N. Wayne St., Apt. 105, Arlington, Va. *1935*
Huebner, Grover G., Univ. of Pennsylvania, Logan Hall, Philadelphia 4, Pa. *1914*
Huebner, Solomon S., 697 S. Highland Ave., Merion, Pa. *1914*
Huegy, Harvey W., 419 Commerce Bldg., Urbana, Ill. *1934*
Huelster, Lowell F., 792 Lenox Rd., Glen Ellyn, Ill. *1937.*
Hughes, Edwin G., 131 Woodland Rd., Madison, N.J. *1943*
Hughes, James F., 14 Wall St., New York, N.Y. *1940*
Humphrey, Don D., 2924 Argyle Dr., Alexandria, Va. *1933*
Hunold, Albert, Bunishof, Feldmeilen, bei Zurich, Switzerland. *1946*
Hunsberger, George E., Univ. of Arkansas, School of Bus. Admin., Fayetteville, Ark. *1934*
Hunsberger, Warren S., 16 W. Woodbine St., Chevy Chase, Md. *1935*
Hunt, Bishop C., Office of the Economist, P. O. Box 111, Back Bay, Boston 17, Mass. *1921*
Hunt, Elgin F., 5404 Kimbark Ave., Chicago 15, Ill. *1933*
Hunt, Pearson, Morgan Hall, Soldiers Field, Boston, Mass. *1935*
Hunt, Rockwell D., 5143 Brynhurst Ave., Los Angeles 43, Calif. *1908*
Hunt, Stanley B., Textile Economics Bur., 10 E. 40th St., New York, N.Y. *1928*
Hunter, Kenneth H., 1408 Decatur, N.W., Washington 11, D.C. *1945*
Hunter, Merlin H., Univ. of Illinois, 225 Commerce Bldg., Urbana, Ill. *1915*
Huntington, Charles C., Ohio State Univ., Columbus 10, Ohio. *1905*
Huntington, Emily H., 1138 Sterling Ave., Berkeley, Calif. *1925*
Huntley, Arthur G., 1140 N. 13th St., Salem, Ore. *1944*
Hupp, Burr W., 1001 Indiana Ave., La Porte, Ind. *1938*
Hurja, Emil E., 624 Albee Bldg., Washington 5, D.C. *1934*

Hurlin, Ralph G., Russell Sage Found., 130 E. 22nd St., New York, N.Y. *1921*

Hurwicz, Leonid, Univ. of Chicago, Committee on Price Control and Rationing, Chicago 37, Ill. *1941*

Husband, William H., 101 Indiana Ave., Washington, D.C. *1927*

Huse, Charles P., 13 Pine St., Belmont 78, Mass. *1908*

Huston, Joseph W., Dept. of Finance, State House, Springfield, Ill. *1934*

Hutcheson, B. Couts, 2209 Park Pl., Ft. Worth 4, Tex. *1946*

Hutcheson, Harold H., Foreign Policy Asso., 22 E. 38th St., New York 16, N.Y. *1937*

Hutchins, John G. B., Cornell Univ., School of Bus. and Pub. Admin., Ithaca, N.Y. *1935*

Hutchinson, Kenneth D., Boston Univ., Col. of Bus. Admin., 685 Commonwealth Ave., Boston 15, Mass. *1930*

Hutner, Frances C. (Mrs. Simeon), 2661 Main St., Lawrenceville, N.J. *1944*

Hyde, D(uncan) Clark, P. O. Box 1385, Charlottesville, Va. *1921*

Hyson, Charles D., Adams House A-13, Cambridge 38, Mass. *1946*

Ianni, Constantino, Viaduto Boa Vista 67, 7 andar, Sao Paulo, Brazil, South America. *1945*

Ikeda, Roy Hoko, 152 N. Eldorado St., San Mateo, Calif. *1943*

Impellizzeri, Julius S., 78 Christopher St., New York 14, N.Y. *1945*

Inman, Mark K., Univ. of Western Ontario, London, Ont., Canada. *1938*

Innes, John W., 99-19 Ascan Ave., Forest Hills, N.Y. *1940*

Innis, Harold A., Univ. of Toronto, Toronto, Ont., Canada. *1923*

Irons, Watrous H., 4142 Grassmere Lane, Dallas 5, Tex. *1945*

Irwin, Harold S., Arlington Village, Apt. 504, Arlington, Va. *1928*

Irwin, William A., American Inst. of Banking, 12 E. 36th St., New York 16, N.Y. *1934*

Isaacs, Asher, Univ. of Pittsburgh, School of Bus. Admin., Pittsburgh, Pa. *1934*

Isard, Walter, Box 361, Middletown, Conn. *1944*

Ischboldin, Boris, St. Louis Univ., School of Com. and Fin., St. Louis, Mo. *1946*

Ise, John, 1208 Mississippi St., Lawrence, Kans. *1911*

Israelsen, Vernon L., 2073 E. Ninth St., Cleveland, Ohio. *1943*

Isserow, Minna, 1343 55th St., Brooklyn 19, N.Y. *1945*

Iveroth, C. A., Legation of Sweden, 1900 24th St., N.W., Washington, D.C. *1944*

Ivory, Austin, 156 Washington St., Weymouth, Mass. *1945*

Jack, Lawrence B., B. C. Electric Ry. Co., Hastings and Carrall Sts., Vancouver, B.C., Canada. *1945*

Jackman, William T., 171 St. Leonards Ave., Toronto 12, Ont., Canada. *1934*

Jackson, Donald, R.F.D. 2, Anacostia, D.C. *1923*

Jackson, Dugald C., 5 Mercer Circle, Cambridge, Mass. *1923*

Jackson, Frederic A., Morgan State Col., Baltimore 12, Md. *1944*

Jackson, J(acob) Hugh, Grad. School of Bus., Stanford University, Calif. *1917*

Jackson, James R., R.F.D. 2, Wentzville, Mo. *1927*

Jackson, Kathleen C., Hollins College, Va. *1927*

Jacobs, Arthur T., 131 Riverside Dr., New York 24, N.Y. *1938*

Jacobs, Clifford D., State Col. of Washington, Pullman, Wash. *1930*

Jacobs, George R., 3517 Martha Custis Dr., Alexandria, Va. *1942*

Jacobsen, Arthur D., Univ. of Redlands, Dept. of Econ., Redlands, Calif. *1945*

Jacobson, Solomon, 3626 Kings Highway, Brooklyn, N.Y. *1943*

Jacobstein, Meyer, 722 Jackson Pl., N.W., Washington 6, D.C. *1944*

Jacoby, Neil H., 5712 Dorchester Ave., Chicago, Ill. *1933*

Jaffé, William, Northwestern Univ., Evanston, Ill. *1925*

James, Clifford L., 1687 Guilford Rd., Columbus, Ohio. *1930*

James, F. Cyril, McGill Univ., Montreal, Que., Canada. *1934*

James, Kenneth V., 4932 Adams St., Kansas City 3, Kans. *1941*

Jameson, Mary E., Nat. Indus. Conf. Bd., 247 Park Ave., New York, N.Y. *1936*

Jamison, Charles L., 108 Tappan Hall, Ann Arbor, Mich. *1923*

Janssen, Hans, 1109 Douglas Ave., Yankton, S.D. *1938*

Jarrett, James M., 2445 15th St., N.W., Apt. 401, Washington, D.C. *1928*

Jefferis, Raymond P., Jr., 41 University Pl., Princeton, N.J. *1939*

Jeffery, Stuart, High St. S., Motueka, N.Z. *1943*

Jeidels, Otto, 300 Montgomery St., San Francisco, Calif. *1911*

Jekel, Oscar H., 517 S. Kirkwood Rd., Kirkwood, Mo. *1934*

Jenkins, David R., 3500 39th St., N.W., Washington 16, D.C. *1944*

Jenkins, L(loyd) Arthur, 9 Corte Anita, Millbrae, Calif. *1941*
Jenkins, Shirley, 3500 39th St., N.W., Washington 16, D.C. *1945*
Jenks, Leland H., 18 Weston Rd., Wellesley, Mass. *1929*
Jenneman, Walter M., Deep Rock Oil Corp., Box 1051, Tulsa 2, Okla. *1944*
Jennings, Henrietta C., Wheaton Col., Norton, Mass. *1927*
Jennings, W. W., 1336 Fontaine Rd., Lexington, Ky. *1923*
Jensen, Carl P. N., 1505 Archer Rd., 10A, New York 62, N.Y. *1945*
Jensen, Vernon H., Univ. of Colorado, Dept. of Econ., Boulder, Colo. *1941*
Jeremiah, David B., Univ. of Pennsylvania, 102 Hare Bldg., Philadelphia 4, Pa. *1941*
Jesness, Oscar B., Div. of Agric. Econ., Univ. Farm, St. Paul, Minn. *1920*
Jesse, Harold C., 20 Exchange Pl., New York 5, N.Y. *1938*
Jeuck, John E., Univ. of Chicago, School of Bus., Chicago 37, Ill. *1942*
Jewett, Roy B., 138 Fairview Ave., N., Minneapolis 12, Minn. *1843*
‡**Jèze,** Gaston P., Université de Paris, Paris, France. *1926*
Joachim, Jerome, 3212 S. Grove Ave., Berwyn, Ill. *1944*
Jocher, Katherine, Univ. of North Carolina, Box 539, Chapel Hill, N.C. *1926*
Joffe, Boris M., 4083 Minnesota Ave., N.E., Washington 19, D.C. *1943*
Johnson, Alvin S., New School for Soc. Res., 66 W. 12th St., New York, N.Y. *1927*
Johnson, Byron L., 9130 Bradford Rd., Silver Spring, Md. *1944*
Johnson, Edgar H., Emory University, Ga. *1910*
Johnson, Edwin C., U. S. Dept. of Agric., Farm Credit Admin., Washington 25, D.C. *1925*
***Johnson,** Emory R., Univ. of Pennsylvania, Logan Hall, Philadelphia 4, Pa. *1893*
Johnson, Ernest A., Lake Forest Col., Lake Forest, Ill. *1925*
Johnson, Everett H., 3939 Pennsylvania Ave., S.E., Apt. 202, Washington, D.C. *1941*
Johnson, G. Griffith, Jr., 811 Crescent Dr., Alexandria, Va. *1939*
Johnson, Homer H., 1669 Union Trust Bldg., Cleveland, Ohio. *1913*
Johnson, Jack, North Texas State Teachers Col., Grad. Div., Denton, Tex. *1945*
Johnson, Keith W., 2029 N. Madison St., Arlington, Va. *1939*
Johnson, Mathews M., 1600 W. Erie Ave., Philadelphia 40, Pa. *1943*
Johnson, Milton O., Marine Nat. Exchange Bank, Milwaukee 1, Wis. *1945*
Johnson, Oliver R., Col. of Agric., Columbia, Mo. *1922*
Johnson, Robert E., 6033 Baltimore Blvd., Riverdale, Md. *1946*
Johnson, Sherman E., 118 N. Jackson St., Arlington, Va. *1932*
Johnson, Walter E., Box 68, Palos Heights, Ill. *1946*
Johnston, Richard H., Bur. of Ry. Econ., Lib., Washington, D.C. *1910*
Johnston, V. D., 133 Randolph Pl., N.W., Washington 1, D.C. *1942*
Johnstone, Susan, 1701 Swann St., N.W., Washington, D.C. *1943*
Jolley, Elmer O., Jr., 16 Canterbury Rd., Winchester, Mass. *1941*
Jome, Hiram L., De Pauw Univ., Dept. of Econ., Greencastle, Ind. *1924*
Jones, Alvin H., 4014 Danneel St., New Orleans, La. *1938*
Jones, Eliot, Stanford University, Calif. *1909*
Jones, Francis C., Minnesota Valley Canning Co., Le Sueur, Minn. *1944*
Jones, Fred M., Univ. of Illinois, Col. of Com., Urbana, Ill. *1937*
Jones, Herschel F., P. O. Box 247, Portland 7, Ore. *1938*
Jones, Homer, 3067 Ordway St., N.W., Washington 8, D.C. *1941*
Jones, James C., III, Jones, Hocker, Gladney and Grand, 407 N. 8th St., St. Louis 1, Mo. *1946*
Jones, John P., 200 Forest Ave., Vermillion S.D. *1946*
Jones, Martin V., 6139 Ellis Ave., Chicago, Ill. *1943*
Jones, Montfort, Univ. of Pittsburgh, Pittsburgh 13, Pa. *1922*
Jones, Ralph C., 302 Sheffield Hall, New Haven, Conn. *1924*
Jones, Robert V., 1324 Forest Ave., Evanston, Ill. *1942*
Jones, Stacy V., R.F.D. 2, Falls Church, Va. *1946*
Jones, Thatcher C., 303 Knollwood Ave., Douglaston, L.I., N.Y. *1935*
Jones, Walter K., 138 Carroll Ave., Takoma Park, Md. *1943*
Jones, William G., 2431 E St., N.W., Apt. 208, Washington, D.C. *1941*
Jones, William O., Dept. of Econ., Stanford University, Calif. *1941*
Jordan, Garret L., Univ. of Illinois, 302 New Agric. Bldg., Urbana, Ill. *1939*
Jorgensen, G. L., 72 W. Adams St., Rm. 1548, Chicago 90, Ill. *1944*

Joseph, Sister, D'Youville Col., Buffalo, N.Y. *1943*

Joseph, Sister M. Edward, Saint Mary's Col., Notre Dame, Holy Cross, Ind., *1939*

Joyce, Robert K., 8713 Lasalle Blvd., Town of Lasalle, Que., Canada. *1946*

Jucius, Michael J., Ohio State Univ., Col. of Com. and Admin., Columbus 10, Ohio. *1934*

Junkin, William R., 2261 Henry Ave., Memphis, Tenn. *1929*

Kafka, Alexander, Escola Livre de Sociologia e Politica de Sao Paulo, Sao Paulo, Brazil,South America. *1946*

§**Kagan,** Leo B., 20 Pine St., New York 5, N.Y. *1945*

Kähler, Alfred, 66 W. 12th St., New York, N.Y. *1940*

Kahler, Clyde M., 112 Crestview Rd., Bywood Heights, Upper Darby, Pa. *1926*

Kahn, Alfred E., Ripon Col., Dept. of Econ., Ripon, Wis. *1943*

Kahn, Irving, 115 Broadway, New York, N.Y. *1945*

Kahn, Richard A., Dept. of Interior, Rm. 3216, Washington, D.C. *1944*

Kaiser, Carl W., 350 N. Wade Ave., Washington, Pa. *1929*

Kalb, John, 115 Central Park W., New York 23, N.Y. *1945*

Kalb, Seymour, 97 Arden St., New York, N.Y. *1943*

Kalish, Samuel, 816 N. Mariposa Ave., Los Angeles, Calif. *1946*

Kaltenborn, Howard S., Curtiss-Wright Corp., 30 Rockefeller Plaza, New York 20, N.Y. *1941*

Kamarck, Andrew M., 6905 Beverly Rd., Bethesda 14, Md. *1942*

Kamber, Francis J., 1503 N. La Salle St., Chicago, Ill. *1942*

Kamm, Jacob O., 4211 Wooster Rd., Rocky River 16, Ohio. *1944*

Kampmeier, Roland A., TVA, Chattanooga, Tenn. *1945*

Kandyba, Bernard S., 9804 Ave. J., Chicago 17, Ill. *1945*

Kantor, Anne G. (Mrs. Harry S.), 2597 Sedgewick Ave., Bronx, New York, N.Y. *1946*

Kantor, Harry S., 2597 Sedgewick Ave., Bronx, New York, N.Y. *1922*

Kaplan, Abraham D. H., Brookings Inst., 722 Jackson Pl., N.W., Washington 6, D.C. *1923*

Kapp, Karl W., 42-08 205th St., Bayside, L.I., N.Y. *1938*

***Karelsen,** Eph. A, 230 Park Ave., New York, N.Y. *1919*

Karger, Jacob, 210 E. Hickory St., East Rochester, N.Y. *1938*

Kass, David, 126 35th St., S.E., Washington 19, D.C. *1946*

Kassalow, Everett M., 110 35th St., S.E., Washington 19, D.C. *1944*

Kassalow, Sylvia D. (Mrs. Everett M.), 110 35th St., S.E., Washington 19, D.C., *1945*

Kastelansky, Grace S., 275 Seaman St., New Brunswick, N.J. *1945*

Katona, George, Dept. of Agric., Bur. of Agric. Econ., Washington 25, D.C. *1945*

Katz, Frank, 3100 Valley Dr., Alexandria, Va. *1943*

Katz, Nathan, 3510 Bainbridge Ave., Bronx, New York, N.Y. *1943*

Kaufman, Abraham, 765 Southern Blvd., Bronx, New York, N.Y. *1937*

Kautz, Katharine I., 35 Melvin Ave., Catonsville 28, Md. *1932*

Keatinge, Richard H., 1328 Martha Custis Dr., Alexandria, Va. *1943*

Keays, Eldred M., 110 E. Wisconsin Ave., Milwaukee, Wis. *1911*

Kebker, Vant W., 4515 34th St., S., Arlington, Va. *1938*

Keezer, Dexter M., 450 Riverside Dr., New York 27, N.Y. *1925*

Keim, Albert G., 6629A Alamo Ave., Clayton, Mo. *1942*

Keim, Walter G., 5059 MacArthur Blvd., N.W., Washington 16, D.C. *1945*

Keir, John S., Dennison Mfg. Co., Framingham, Mass. *1934*

Keir, Malcolm, Dartmouth Col., Hanover, N.H. *1921*

Keister, Albert S., North Carolina Col. for Women, Greensboro, N.C. *1924*

Keith, E(dward) Gordon, 607 Whittier St., Washington, D.C. *1936*

Keith, George R., Los Altos, Calif. *1944*

Keller, Henry, Jr., 419 Lincoln Ave., Highland Park, New Brunswick, N.J. *1930*

Keller, Louis A., Lake Forest Col., Lake Forest, Ill. *1929*

Kelley, James W., 8416 Manchester Rd., Silver Spring, Md. *1942*

Kelley, Nicholas, 70 Broadway, New York, N.Y. *1927*

Kelley, Pearce C., Univ. of Arkansas, School of Bus., Fayetteville, Ark. *1928*

Kellogg, John P., 231 S. La Salle St., Rm. 1928, Chicago 4, Ill. *1946*

Kellogg, Lester S., 404 Shady Lane, Falls Church, Va. *1928*

Kellogg, Ruth M., "Lilacstead," Wilton, Conn. *1929*

Kelly, Armand W., Box 1663, Santa Fe, N.M. *1939*

Kelly, Edward J., 1756 Rhodes St., N., Arlington, Va. *1940*

Kelly, Edward W., 5833 11th St., N., Arlington, Va. *1944*
Kelly, Matthew A. (Lt.), U. S. Group Control Council, Manpower Div., A.P.O. 742, New York, N.Y. *1940*
Kelly, Thomas A., 813 Horner Ave., Nashville 4, Tenn. *1942*
Kelly, Thomas H., Natal Univ. Col., P. O. Box 1525, Durban, South Africa. *1930*
Kelso, Harold, 10015 Rogart Rd., Silver Spring, Md. *1934*
Kemmerer, Donald L., 1006 W. Armory Ave., Champaign, Ill. *1934*
Kemp, Arthur, 18 Roosevelt St., Garden City, L.I., N.Y. *1939*
Kemp, Florence B., 88-44 161st St., Jamaica, L.I., N.Y. *1944*
Kemp, Hubert R., Dept. of Trade and Com., Ottawa, Ont., Canada. *1923*
Kendikian, Alice S., 326 Audubon Ave., New York, N.Y. *1941*
Kendrick, M(yron) Slade, 225 Willard Way, Ithaca, N.Y. *1922*
Kennedy, Charles J., Dept. of Econ., Soc. Sci. Bldg., Lincoln 8, Neb. *1946*
Kennedy, Donald D., 601 19th St., N.W., Apt. 205, Washington, D.C. *1930*
Kennedy, John W., 319 E. Trinity Ave., Durham, N.C. *1946*
Kennedy, Stephen J., 5823 14th St., N.W., Washington, D.C. *1935*
Kennedy, William F., 1309 N. Oak St., Arlington, Va. *1941*
Kenney, Francis R., 215 Montgomery St., Chevy Chase, Md. *1944*
Kent, Leonard, Univ. of Chicago, Haskell Hall, Chicago 37, Ill. *1946*
Kent, Raymond P., Box 114, Notre Dame, Ind. *1934*
Kenyon, Kenneth A., 2038 Pierce Mill Rd., Washington 10, D.C. *1944*
Kerestesy, Kathrine, 45 Christopher St., New York 14, N.Y. *1928*
Kerr, Clark, Univ. of California, School of Bus., Berkeley, Calif. *1936*
Kerr, Peyton, 421 Argyle Dr., Alexandria, Va. *1938*
Kerrigan, Harry D., 2319 Sherman Ave., Evanston, Ill. *1943*
Kerry, Albert S., Jr., 422 Medical Arts Bldg., Seattle, Wash. *1927*
Kershaw, Joseph A., Arlington Village, Apt. 651, Arlington, Va. *1939*
Kessler, William C., Colgate Univ., Hamilton, N.Y. *1938*
Ketchum, Marshall D., Univ. of Chicago, School of Bus., Chicago 37, Ill. *1937*
Key, V. O., Johns Hopkins Univ., Baltimore 18, Md. *1943*
***Keynes**, John N., 6 Harvey Rd., Cambridge, England. *1888*
Keyserling, Mary D. (Mrs.), 3234 N St., N.W. Washington, D.C. *1938*
Kibler, Thomas L., Ohio State Univ., Col. of Com. and Journ., Columbus 10, Ohio. *1911*
Kidner, Frank L., Univ. of California, Dept. of Econ., Berkeley, Calif. *1937*
Kiekhofer, William H., 1919 Arlington Pl., Madison 5, Wis. *1914*
Kiernan, Charles J., 14 Fairbanks St., Hillside, N.J. *1933*
Kilduff, Vera R. (Mrs.), 411 State St., Albany, N.Y. *1939*
Killheffer, Elvin H., 6504 Nemours Bldg., Wilmington 98, Del. *1942*
Killingsworth, Charles C., Johns Hopkins Univ., Dept. of Polit. Econ., Baltimore, Md. *1941*
Killough, Hugh B., 22 Belair Rd., Wellesley 81, Mass. *1941*
Killough, Lucy W. (Mrs. Hugh B.), 22 Belair Rd., Wellesley 81, Mass. *1921*
Kimball, Milo, Ohio State Univ., Col. of Com. and Admin., Columbus 10, Ohio. *1921*
Kimberland, Kendall G., 25 Lincoln St., Glen Ridge, N.J. *1935*
Kimmel, Lewis H., Brookings Inst., 722 Jackson Pl., N.W., Washington 6, D.C. *1941*
Kincaid, Elbert A., Box 1575, Univ. Sta., Charlottesville, Va. *1922*
Kindleberger, Charles P., R.F.D. 2, Alexandria, Va. *1935*
King, Alan F., 600 Winston Ave., San Marino 9, Calif. *1935*
King, Harold J., 3430 Glenwood Ave., Toledo 10, Ohio. *1938*
King, León, 3512 Avenue du Parc, Montreal, Que., Canada. *1946*
King, Robert C., 1705 37th St., N.W., Washington 7, D.C. *1946*
King, Willford I., 28 Shore Rd., Douglaston, N.Y. *1911*
***Kinosita**, Yetaro, 154, Imasatocho, Shirokane, Shibaku, Tokyo, Japan. *1904*
Kinsella, Thomas, 2103 Suitland Ter., S.E., Washington, D.C. *1932*
Kinsman, Delos O., 4426 Klingle St., Washington, D.C. *1926*
Kinzie, George R., 4409 Mildred Ave., Bethesda, Md. *1941*
Kirby, Richard M., Decartelization Br., OMGUS Rear, U. S. Army, A.P.O. 757, c/o Postmaster, New York, N.Y. *1940*
Kirk, Lester K., Standard Accident Ins. Co., 640 Temple Ave., Detroit 32, Mich. *1927*
Kirk, William, Pomona Col., Claremont, Calif. *1903*
Kirkpatrick, Arthur L., 1717 Columbia Rd., N.W., Washington 9, D.C. *1937*

Kirkpatrick, Mrs. Arthur L., 1717 Columbia Rd., N.W., Washington 9, D.C. *1945*
Kirn, Brian, 1362 Monroe St., N.E., Washington 17, D.C. *1944*
Kirshen, Himy B., Univ. of Maine, Dept. of Econ. and Soc., Orono, Me. *1939*
Kirsten, Mary H., 1708 Lamont St., N.W., Washington, D.C. *1943*
Kisselgoff, Avram L., 617 W. 113th St., New York, N.Y. *1944*
Kito, Frank E., 4508 S. Ellis Ave., Chicago 15, Ill. *1946*
Kjellstrom, Erik T. H., Nat. Asso. of Manufacturers, 14 W. 49th St., New York 20, N.Y. *1938*
Klaragard, Sever, 1118 St. Olaf Ave., Northfield, Minn. *1921*
Klarman, Herbert E., 2000 H St., N.W., Washington, D.C. *1946*
Kleene, Gustav A., 689 Asylum Ave., Hartford, Conn. *1898*
Klein, Jeanne H., 19 S. 10th St., Newark 7, N.J. *1943*
Klein, Joseph J., 60 E. 42nd St., New York, N.Y. *1909*
Klein, Julius, 2141 Wyoming Ave., N.W., Washington, D.C. *1911*
Klein, Philip, New York School of Social Work, 122 E. 22nd St., New York, N.Y. *1936*
Kline, Henry B., 108 N. Central Ave., Clayton 5, Mo. *1942*
Klingenstein, Joseph, 120 Broadway, New York, N.Y. *1936*
Klopstock, Fred H., 33 Liberty St., New York, N.Y. *1944*
Klott, J. J., Loras Col., Dubuque, Iowa. *1946*
Knaf, Henry G., 83-80 118th St., Kew Gardens, L.I., N.Y. *1939*
Knapp, Joseph G., Co-operative Div., Farm Credit Admin., Washington, D.C. *1927*
Knappen, Laurence S., 2611 S. Lynn, Arlington, Va. *1934*
§**Knauth,** Oswald W., 27 W. 67th St., New York, N.Y. *1911*
Kneeland, Hildegarde, 5000 Allandale Rd., Washington 16, D.C. *1940*
Knight, Bruce W., Dartmouth Col., Dept. of Econ., Hanover, N.H. *1939*
Knight, Earl L., 4022 Marshall Rd., Drexel Hill, Pa. *1937*
Knight, Frank H., Univ. of Chicago, Chicago 37, Ill. *1915*
Knight, Melvin M., Univ. of California, Dept. of Econ., Berkeley 4, Calif. *1924*
Knipe, James L., 3351 Stephenson Pl., N.W., Chevy Chase, D.C. *1937*
Knollmeyer, Lewis E., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1942*
Knorr, K. E., Yale Univ., Inst. of Int. Studies, New Haven, Conn. *1945*
Knowles, James W., Econometric Inst., 500 Fifth Ave., New York 18, N.Y. *1944*
Knox, Frank A., Queen's Univ., Dept. of Econ., Kingston, Ont., Canada. *1926*
Knox, Newton B., 247 Delaware Ave., S.W., Apt. 110, Washington, D.C. *1945*
Kobrock, John P., 230 Harvard Circle, Newtonville 60, Mass. *1940*
Koch, Albert R., 4800 Fairfax Dr., Apt. 3, Arlington, Va. *1945*
Kochenderfer, C. C., Kent State Univ., Kent, Ohio. *1945*
Koenig, Herman J., 801 N. Wayne St., Apt. 101, Arlington, Va. *1943*
Kohler, E. L., 1 N. La Salle St., Chicago 2, Ill. *1939*
Kohn, Paul, 2115 R St., S.E., Washington 20, D.C. *1942*
Kohnen, George B., St. Mary's Univ., San Antonio, Tex. *1942*
Kolbe, Frank F., 307 N. Michigan Ave., Chicago, Ill. *1941*
Kolchin, Morris, 200 W. 15th St., New York, N.Y. *1932*
Koller, E. Fred, Univ. of Minnesota, Univ. Farm, St. Paul, Minn. *1942*
Koontz, Harold D., TWA, 101 W. 11th St., Kansas City 6, Mo. *1933*
Koopmans, Tjalling, Cowles Com. for Res. in Econ., Univ. of Chicago, Chicago 37, Ill. *1941*
Koos, Theodore L., 211 Elm St., Edgewood, Pittsburgh 18, Pa. *1944*
Kopelman, Vera W. (Mrs.), 4301 Bedford Ave., Brooklyn, N.Y. *1943*
Korey, Edward L., 95 Linden Blvd., Brooklyn 26, N.Y. *1940*
Korican, Otto H., 156 E. 71st St., New York, N.Y. *1944*
Kosloff, I. Ray, Hassidoff Bldg., Prophets St., Jerusalem, Palestine. *1945*
Kottke, Frank J., 4044 Warwick Ave., Chicago 41, Ill. *1940*
Kouperman, A. Boris, 130 N. Wells St., Rm. 639, Chicago, Ill. *1935*
Kozelka, Richard L., Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1923*
Krairiksh, Poonperm (Capt.), 0-1872739, Det. 404, A.P.O. 432, c/o Postmaster, New York, N.Y. *1944*
Kramer, Charles, 4621 S. 34th, Arlington, Va. *1945*
Kramer, Leon, 19 W. 8th St., New York, N.Y. *1941*
Krause, Walter, Canby, Ore. *1945*
Krauss, Daniel T., 603 E. Cecil St., Springfield, Ohio. *1935*

Kravis, Irving B., 4376 N. Pershing Dr., Arlington, Va. *1941*
Kravitz, Birdie, 184 Vernon Ave., Brooklyn 6, N.Y. *1945*
Kravitz, Hilda, 184 Vernon Ave., Brooklyn 6, N.Y. *1946*
Kreider, Carl, Goshen Col., Goshen, Ind. *1941*
Kreps, Clifton H., Jr., Mount Union Col., Dept. of Econ., Alliance, Ohio. *1946*
Kreps, Juanita M. (Mrs. Clifton H., Jr.), Mount Union Col., Dept. of Econ., Alliance, Ohio. *1946*
Kreps, Theodore J., Grad. School of Bus., Stanford Univ., Calif. *1939*
Kress, Andrew J., 4234 47th St., N.W., Washington, D.C. *1944*
Krueger, Maynard C., Univ. of Chicago, Chicago 37, Ill. *1940*
Kube, Harold D., 2831 Beechwood Circle, Arlington, Va. *1940*
Kuhns, William R., American Bankers Asso., 22 E. 40th St., New York, N.Y. *1934*
Kurihara, Kenneth K., 1919 S St., N.W., Washington 9, D.C. *1946*
Kushner, Elias A., 780 Riverside Dr., New York 32, N.Y. *1944*
Kusik, John E., 138 N. Mountain Ave., Montclair, N.J. *1934*
Kuznets, Simon S., 7301 Mountain Ave., Melrose Park, Philadelphia, Pa. *1933*
Kyler, Rudolph H., Luther Col., Decorah, Iowa. *1945*
Kyrk, Hazel, 5717 Kimbark Ave., Chicago, Ill. *1920*

Labadie, Juan, Box 113, Aguadilla, P.R. *1941*
Labastille, Ferdinand M., 111 Haddon Pl., Upper Montclair, N.J. *1936*
Labovitz, Israel M., Bur. of the Budget, 1712 Gee St., N.W., Washington 25, D.C. *1932*
Lachmann, Karl E., 2321 Ashmead Pl., N.W., Washington 9, D.C. *1938*
La Fever, Mortier W., 5912 16th St., N., Arlington, Va. *1946*
Laidler, Harry W., 292 Garfield Pl., Brooklyn, N.Y. *1924*
La Macchia, Frank R., 2G Plateau Pl., Greenbelt, Md. *1945*
Lamb, George A., Wooten Dr., Lee Blvd. Heights, Falls Church, Va. *1934*
Lamden, Charles W., 4470 Iowa St., San Diego 4, Calif. *1943*
Lamke, Edwin A., Asst. to Chief Conservation Engineer, TVA, Knoxville, Tenn. *1930*
Lamont, Thomas W., 23 Wall St., New York, N.Y. *1918*
Landauer, Carl, 1317 Arch St., Berkeley, Calif. *1935*
Landman, J. H., Nat. Indus. Conf. Bd., 247 Park Ave., New York, N.Y. *1944*
Landon, Charles E., Duke Univ., Dept. of Econ., Durham, N.C. *1939*
Landry, Richard S., Beloit Col., Morse-Ingersoll Hall, Rm. 126, Beloit, Wis. *1941*
Landry, Robert J., 143 E. 39th St., New York, N.Y. *1942*
Landuyt, Bernard F., Univ. of Detroit, Col. of Com. and Fin., Detroit, Mich. *1946*
Lanfear, Vincent W., Univ. of Pittsburgh, Cathedral of Learning, Pittsburgh, Pa. *1920*
Lang, Aldon S., Box 3805, Texas State Col. for Women Sta., Denton, Tex. *1929*
Lang, Frank, Asso. of Casualty and Surety Executives, 60 John St., New York 7, N.Y. *1944*
Lange, Oscar, Polish Embassy, Washington 9, D.C. *1938*
Langer, Felix G., 1 Wall St., New York, N.Y. *1943*
Langer, Henry C., Jr., Keuka Col., Keuka Park, N.Y. *1944*
Langhoff, Severin P., Jr., 532 20th St., N.W., Apt. 614, Washington 6, D.C. *1942*
Langmuir, Dean, 90 Broad St., New York, N.Y. *1913*
Langsner, A., 2640 W. Coyle Ave., Chicago 45, Ill. *1941*
Langum, John K., Fed. Res. Bank, Chicago, Ill. *1944*
Lanier, Charles N., Jr., Univ. of Delaware, Newark, Del. *1941*
Lanyon, Alan, R. D. 3, Box 180, Alexandria, Va. *1943*
Larcom, Russell C., P.O. Box 1451, University, Ala. *1936*
Larimore, Theodore R., Atlantic Union Col., South Lancaster, Mass. *1934*
Larkin, George R., 315 N. Stratton St., Gettysburg, Pa. *1938*
Larrabee, Robert A., 210 Stacy Ave., Trenton, N.J. *1942*
Larsen, Harald C., 2808 Cameron Mills Rd., Alexandria, Va. *1941*
Larson, Adlowe L., Oklahoma A. and M. Col., Stillwater, Okla. *1937*
Larson, Henrietta M., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1937*
Lary, Hal B., 4834 Langdrum Lane, Chevy Chase 15, Md. *1946*
Lassen, Andrew P., San Mateo Junior Col., San Mateo, Calif. *1930*
Lasso de la Vega, José N., Apartado 679, Panama, Panama. *1944*
Lasswell, Harold D., Yale Univ., School of Law, New Haven, Conn. *1945*
Latimer, Murray W., 2911 Albemarle St., N.W., Washington 8, D.C. *1925*

Latour, C. Charles, 10 Meadway, Bronxville, N.Y. *1922*
Latta, Maurice C., Univ. of Nebraska, Lincoln, Neb. *1946*
Laursen, Svend, 1824 Harvard St., N.W., Washington 9, D.C. *1945*
Lauter, Sylvia, 220 W. 93rd St., New York 25, N.Y. *1941*
Lauterbach, Albert, 545 W. 236th St., New York 63, N.Y. *1939*
Lawrence, George J., Rochester Chamber of Com., Rochester, N.Y. *1944*
Lawres, Irving A. J., Eton Hall, Scarsdale, N.Y. *1933*
Lawson, Eric W., 1313 N. Powhatan St., Arlington, Va. *1940*
‡**Layton,** Sir Walter T., The Economist, London, England. *1932*
Learned, Edmund P., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1923*
Learned, Edna J., Iowa State Col., 207 Agric. Annex, Ames, Iowa. *1946*
Leavens, Dickson H., Cowles Com., Univ. of Chicago, Chicago 37, Ill. *1929*
Leavitt, William L., Hotel Windemere W., 1600 E. 56th St., Chicago 37, Ill. *1939*
Lebergott, Stanley, 3480 University Ave., Montreal, Que., Canada. *1942*
Leblond, Arthur J., 2 Cook St., Quebec, Que., Canada. *1944*
Lederer, Walther, 19 Riggs Rd., N.E., Washington, D.C. *1936*
Lee, Felix H., 2314 E. Hill Ave., Cincinnati 8, Ohio. *1944*
Lee, Frederic E., Univ. of Illinois, 311 Commerce Bldg., Urbana, Ill. *1930*
Lee, Harry H., 750 Arlington Village, 1600 S. Barton St., Arlington, Va. *1935*
Lee, Judson F., Ottawa Univ., Ottawa, Kans. *1942*
Lee, Kan, Chinese Embassy, Washington, D.C. *1943*
Lee, Laura V., 1212 Girard St., N.W., Washington 9, D.C. *1943*
Lee, Maurice W., 705 N. Edison St., Arlington, Va. *1939*
Lee, Ralph M., Mars Hill Col., Mars Hill, N.C. *1945*
Leese, Charles, James Millikin Univ., Decatur 24, Ill. *1927*
§**Leffingwell,** R. C., 38 E. 69th St., New York, N.Y. *1921*
Lefker, Harry, 291 Broadway, New York, N.Y. *1942*
Legan, William E., 1010 Pine St., St. Louis 1, Mo. *1940*
Lehman, Robert S., 8436 Piney Branch Ct., Silver Spring, Md. *1944*
Leigh, Arthur H., Reed Col., Div. of Hist. and Soc. Sci., Portland 2, Ore. *1945*
Leigh, Warren W., 1081 Bloomfield Ave., Akron, Ohio. *1926*
Leiserson, William M., 3210 34th St., N.W., Washington 8, D.C. *1915*
Leiter, Robert D., 1402 Bristow St., New York 59, N.Y. *1946*
Leland, Rosco G., 7440 N. Seeley Ave., Chicago, Ill. *1940*
Leland, Simeon E., Univ. of Chicago, Dept. of Econ., Chicago 37, Ill. *1921*
Leland, Thomas W., A. and M. Col. of Texas, College Station, Tex. *1931*
Lemke, B. C., Iowa State Col., 114 Engineering Hall, Ames, Iowa. *1942*
Lemon, Steen C., P.O. Box 331, Britton, Okla. *1941*
Leonard, Joy L., Univ. of Southern California, Los Angeles 7, Calif. *1927*
Leonard, Norman H., Jr., Trappe, Md. *1941*
Leonard, William N., 2509 W. 50th Ter., Kansas City, Kans. *1940*
Leonard, William R., Bur. of the Budget, Div. of Statis. Stand., State Dept. Bldg., Washington 25, D.C. *1929*
Leontief, Wassily W., 16 Kirkland Rd., Cambridge, Mass. *1937*
Lerager, Arild J., Harper and Bros., College Dept., 49 E. 33rd St., New York 16, N.Y. *1946*
Lerner, Abba P., New School for Soc. Res., 66 W. 12th St., New York, N.Y. *1940*
Lerner, Pauline A. (Mrs.), 223 N. George Mason Dr., Arlington, Va. *1942*
Le Rossignol, James E., Sta. A, Lincoln, Neb. *1896*
Lescohier, Don D., 4161 Hiawatha Dr., Madison, Wis. *1913*
Lesher, Carl E., 18 Wilson Dr., Ben Aven Heights, Pittsburgh, Pa. *1921*
Leslie, Gary A., American Fair Trade Coun., 11 W. 42nd St., New York 18, N.Y. *1945*
Lesser, Arthur, Jr., Stevens Inst. of Tech., Econ. of Engineering Dept., Hoboken, N.J. *1940*
Lester, Allen H., American Consulate, Sao Paulo, Brazil, c/o Foreign Mail Rm., U. S. Dept. of State, Washington 25, D.C. *1939*
Lester, Richard A., Princeton Univ., Econ. Dept., Princeton, N.J. *1929*
Leung, Ping-Kei, 1715 Wisconsin Ave., N.W., Washington 7, D.C. *1941*
Leven, Maurice, R.F.D. 2, Falls Church, Va. *1938*
Leven, Stephan, 120 Wall St., New York 5, N.Y. *1945*
Levin, Gerson, 11 35th St., S.E., Washington, D.C. *1944*
Levin, Mitchell J., 139 E. 35th St., New York, N.Y. *1940*

Levin, Nathan W., 570 Lexington Ave., New York 22, N.Y. *1945*
Levin, Samuel M., 12515 Broadstreet, Detroit, Mich. *1921*
Levine, Albert J., S. J. Tilden High School, E. 57th St., Brooklyn 3, N.Y. *1939*
Levine, Marvin, 60 Caryl Ave., Yonkers, N.Y. *1946*
Levinson, Harold M., Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1945*
Levitan, Sar, 277 Henry St., Brooklyn 2, N.Y. *1944*
Levy, Saul, 1 Wall St., New York, N.Y. *1917*
Lewins, Leon, 3424 B St., S.E., Washington 19, D.C. *1945*
Lewis, Ben W., 68 S. Professor St., Oberlin, Ohio. *1923*
Lewis, Clarence, 20 Exchange Pl., Rm. 3006, New York 5, N.Y. *1946*
Lewis, Edward E., Howard Univ., Dept. of Econ., Washington, D.C. *1942*
Lewis, John P. (Lt.), U.S.S. Cape Esperance (CVE 88), c/o Fleet P.O., San Francisco, Calif. *1944*
Lewis, Mabel S., 112 Waverly Pl., New York 11, N.Y. *1935*
Lewis, Robert M. (Lt.), U.S.S. Coasters Harbor (AG-74), c/o Fleet P.O., San Franscisco, Calif. *1943*
Lewis, Sir Willmott, Nat. Press Bldg., Rm. 1292, Washington, D.C. *1944*
Lewisohn, Sam A., 61 Broadway, New York, N.Y. *1912*
Leza, Walterio, 104 San Rafael St., Havana, Cuba. *1942*
§**Li,** Philiton Chung-Hwai, c/o Mrs. Ti-Hua Chao, 1661 Rue Joffre, Shanghai, China. *1945*
Liberfarb, Sidney, 55 Hiawatha Rd., Mattapan 26, Mass. *1943*
Lichtenstein, Walter, First Nat. Bank, Chicago. Ill. *1921*
Liebenberg, Maurice, 3924 W St., N.W., Washington 7, D.C. *1946*
Lieberman, I. M., 5542 Everett Ave., Chicago, Ill. *1946*
Liebling, Herman I., 1420 Chapin St., N.W., Washington, D.C. *1943*
Lieson, William A., 17 Litchfield St., Springfield 8, Mass. *1935*
Lillaston, John B., P.O. Box 28, Falls Church, Va. *1940*
Lilliston, Lester F., 223 S. East Ave., Oak Park, Ill. *1943*
Limber, Ralph C., 166 Elm St., Montpelier, Vt. *1942*
Lin, Lin, Servicio Chino de Noticias, 16 de Septiembre, No. 6, Mexico, D.F. *1936*
Lincoln, Edmond E., Du Pont Bldg., Rm. 9136, Wilmington, Del. *1914*
Lindahl, Martin L., Dartmouth Col., Dept. of Econ., Hanover, N.H. *1945*
Lindblom, Charles E., 221 Walnut, S.E., Minneapolis, Minn. *1942*
Lindeman, John, 4640 13th St., N., Arlington, Va. *1941*
Linder, Robert L., 915 Ridgecrest Dr., Albuquerque, N.M. *1941*
Lindholm, Richard W., Ohio State Univ., Col. of Com., Columbus 10, Ohio. *1940*
Lindman, Bertram H., Joint Fact-Finding Com. on Highways, State Capitol, Rm. 214, Sacramento 14, Calif. *1934*
Lindow, Wesley, 916 S. Highland St., Arlington, Va. *1944*
***Lindsay,** Samuel M., Columbia Univ., 305 Fayerweather Hall, New York 27, N.Y. *1894*
Link, Robert G., 641 W. 169th St., New York, N.Y. *1942*
Lintner, John, 7 Sumner Rd., Apt. 21, Cambridge 38, Mass. *1945*
Lipkowitz, Irving, 237 E. 20th St., New York, N.Y. *1939*
Lipman, F. L., c/o Wells Fargo Bank and Union Trust Co., San Francisco, Calif. *1894*
Lippincott, Isaac, Washington Univ., St. Louis, Mo. *1911*
Lipsky, Daniel, Brooklyn Col., Dept. of Econ., Bedford and Ave. H, Brooklyn, N.Y. *1942*
Lipstein, Benjamin, 186 Sullivan Pl., Brooklyn 25, N.Y. *1945*
Lishan, John M., 147 N. Windsor Blvd., Los Angeles, Calif. *1946*
Lissner, Will, c/o New York Times, Times Sq., New York 18, N.Y. *1944*
Litman, Simon, Univ. of Illinois, 320 Commerce Bldg., Urbana, Ill. *1909*
Litterer, Oscar F., 4504 17th Ave., S., Minneapolis, Minn. *1941*
Little, Virginia C. (Mrs. George T.), 220 Park St., Apt. B2, New Haven, Conn. *1944*
Littler, Robert, Littler, Coakley and Lauritzen, 111 Sutter, San Francisco 4, Calif. *1945*
Liu, Ta-Chung, Chinese Embassy, 2001 19th St., N.W., Washington, D.C. *1941*
Livermore, Shaw, Seminary St., New Canaan, Conn. *1935*
Livingston, Joseph A., Tinicum, Pa. *1940*
Livingston, S. Morris, Fouracre Farm, Burnt Mills Hills, Silver Spring, Md. *1944*
Livingstone, Earl L., 4800 Georgia Ave., N.W., Washington 11, D.C. *1945*
Lo, Wan-Sen, China Defense Supplies, 1601 V St., N.W., Washington, D.C. *1942*
Locke, Henry D., Liberty Mutual Insurance Co., 175 Berkeley St., Boston, Mass. *1935*
Lockhart, Oliver C., 15 Abingdon Rd., Washington 16, D.C. *1904*
Lockley, Lawrence C., E. I. du Pont de Nemours

and Co., Adv. Dept., Nemours Bldg., Rm. 2545, Wilmington 98, Del. *1929*

Locklin, D(avid) Philip, 1106 S. Garfield St., Urbana, Ill. *1922*

Loeb, Isidor, Washington Univ., St. Louis, Mo. *1892*

Loenholdt, Fritz, 4638 S. 31st Rd., Arlington, Va. *1944*

Loft, Jacob, 909 E. 29th St., Brooklyn 10, N.Y. *1940*

Loftus, John A., 4426 Volta Pl., N.W., Washington 7, D.C. *1940*

Loftus, Joseph E., c/o John A. Loftus, 4426 Volta Pl., N.W., Washington 7, D.C. *1945*

Logan, Harold A., Univ. of Toronto, Dept. of Econ., Toronto, Ont., Canada. *1920*

Logan, Robert R., Univ. of Arkansas, Col. of Bus. Admin., Fayetteville, Ark. *1931*

Lohman, Philipp H., Univ. of Vermont, Dept. of Econ., Burlington, Vt. *1944*

Loman, Harry J., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1934*

Long, Clarence D., 3545 Martha Custis Dr., Parkfairfax, Alexandria, Va. *1939*

Long, Dean, Evansville Col., Evansville, Ind. *1928*

Long, John J., Arcady Hotel, 2619 Wilshire Blvd., Los Angeles 5, Calif. *1930*

Long, Louis J., Allegheny Col., Meadville, Pa. *1940*

§**Long,** Thomas G., 1436 Chicago Blvd., Detroit, Mich. *1924*

Lonigan, Edna, 320 E. 42nd St., New York 17, N.Y. *1941*

Loomis, Robert H., 190 Forest Ave., West Newton 65, Mass. *1915*

Lopata, Simon, 43 Hart St., Brooklyn 6, N.Y. *1943*

López-Fresquet, Rufo A., E. No. 409, Apartamento 301, Vedado, Havana, Cuba. *1943*

Lorenz, Max O., 253 Oxford Ave., Palo Alto, Calif. *1905*

Lorig, Arthur N., Univ. of Washington, Seattle, Wash. *1936*

Lorwin, Lewis L., The Marlyn, 3000 39th St., N.W., Washington, D.C. *1916*

Losee, Gordon C., 4119 N. Fourth St., Apt. 2, Buckingham Community, Arlington, Va. *1937*

Lottmann, Victor G., Booz, Allen and Hamilton, 135 S. La Salle St., Chicago 3, Ill. *1945*

Loucks, William N., Univ. of Pennsylvania, Logan Hall, Philadelphia 4, Pa. *1925*

Loud, Marjorie A., 1417 N St., N.W., Washington, D.C. *1945*

Lough, William H., 285 Madison Ave., New York, N.Y. *1908*

Lougheed, William F., Canadian Bank of Com., 25 King St., W., Toronto, Ont., Canada. *1944*

Louis, Nathan, 2300 Loring Pl., New York 53, N.Y. *1946*

Lovass, Leslie, 1904 Key Blvd., Apt. 451, Arlington, Va. *1936*

Love, Joseph L., 410-17 Littlefield Bldg., Austin, Tex. *1940*

Love, Robert A., 17 Lexington Ave., New York, N.Y. *1925*

Loveday, Alexander, 7 Greenholm, Princeton, N.J. *1941*

Lovejoy, Frank W., 56 Berkeley St., Rochester, N.Y. *1914*

Lovenstein, Meno, 2300 Rosewood Ave., Richmond, Va. *1945*

Loverdos, Alexander, 30 Rockefeller Plaza, New York 20, N.Y. *1945*

Lowe, Adolph, 10 Park Ter., E., New York, N.Y. *1941*

§**Lowenthal,** Esther, 76 Crescent St., Northampton, Mass. *1910*

Lowing, Herbert J., 1220 Donald Ave., Apt. 18, Lakewood 7, Ohio. *1942*

Lubin, Isador, Commissioner of Labor Statis., Washington, D.C. *1932*

Lucas, Arthur F., Clark Univ., Worcester, Mass. *1921*

Lucas, John W., Univ. of Omaha, Omaha, Neb. *1935*

Luce, Robert, 91 Summer St., Waltham, Mass. *1911*

Luck, Mary G., Univ. of California, Dept. of Econ., 119 South Hall, Berkeley, Calif. *1946*

Ludlow, William L., Muskingum Col., New Concord, Ohio. *1941*

Luedtke, Charles L., U. S. Maritime Com., Div. of Econ. and Statis., Washington 25, D.C. *1946*

Luhnow, Harold W., 667 W. 70th St., Kansas City, Mo. *1943*

Lukaczer, Moses, 127 Carroll St., S.E., Washington, D.C. *1938*

Lukens, Samuel J., 30 Waconah Rd., Worcester 5, Mass. *1930*

Lumpkin, Katharine D., 54 Prospect St., Northampton, Mass. *1932*

Lunden, Laurence R., 3700 48th Ave., S., Minneapolis, Minn. *1930*

Lundy, J. Edward, Dearborn Inn, Dearborn, Mich. *1946*

Lurié, Samuel, 390 Riverside Dr., New York, N.Y. *1943*

Lusher, David W., 2702 Wisconsin Ave., N.W., Washington, D.C. *1941*

Luten, Daniel B., 2136 N. Illinois St., Indianapolis, Ind. *1930*

Luthringer, George F., 4401 Cathedral Ave., Washington 16, D.C. *1930*

Lutz, Friedrich A., 12 Prospect Apts., Princeton, N.J. *1938*

Lutz, Harley L., 20 Nassau St., Princeton, N.J. *1910*
Lutz, John P., 609 Villa Rd., Drexel Hill, Pa. *1942*
Lutz, Warren H., 533 Orchard Ave., Yeadon, Dela. Co., Pa. *1941*
Lutzker, Samuel, 1111 St. Johns Pl., Brooklyn, N.Y. *1941*
Lynd, Robert S., Columbia Univ., Fayerweather Hall, New York 27, N.Y. *1939*
Lyne, James G., 30 Church St., Rm. 940, New York, N.Y. *1935*
Lynn, Fred L., 39-51 46th St., Long Island City, N.Y. *1945*
Lyon, Hastings, 10 McClellan St., Amherst, Mass. *1912*
Lyon, Leverett S., 1 N. La Salle St., Chicago, Ill. *1923*
Lyons, James A., P.O. Box 194, Maryville, Mo. *1944*
Lyons, John H., Enfield Pub. High School, Soc. Studies Dept., Thompsonville, Conn. *1943*
Lyons, Will, 1351 Taylor St., N.W., Washington 11, D.C. *1945*

Macario, Santiago P., A. Garzon 2135, Cordoba, Argentina, South America. *1944*
Macaulay, Fred R., 120 Broadway, Rm. 1123, New York, N.Y. *1919*
MacDonald, Lois, New York Univ., Washington Square Col., New York 3, N.Y. *1944*
MacGarvey, Charles J., Orchard Cottage, Brooklandville, Md. *1940*
MacGibbon, Duncan A., Bd. of Grain Commissioners for Canada, Winnipeg, Man., Canada. *1911*
MacGowan, Thomas G., 214 Merriman Rd., Akron 3, Ohio. *1945*
MacGregor, Donald C., Univ. of Toronto, Dept. of Polit. Econ., Toronto 5, Ont., Canada. *1930*
Machlup, Fritz, Office of Alien Property Custodian, Nat. Press Bldg., Washington, D.C. *1935*
Mack, Russell H., 31 Whitemarsh Rd., Ardmore, Pa. *1931*
Mack, Ruth P., Nat. Bur. of Econ. Res., 1819 Broadway, New York 23; N.Y. *1941*
MacKenzie, T(homas) Findlay, 151 W. 12th St., Apt. 35, New York 11, N.Y. *1928*
Mackintosh, William A., Dept. of Reconstruction, Ottawa, Ont., Canada. *1918*
Maclaurin, W(illiam) Rupert, M.I.T., Rm. 1-282, Cambridge, Mass. *1937*
MacLeish, John E., 134 S. La Salle St., Chicago, Ill. *1934*
MacMorland, Robert B., Col. Sta., Berrien Springs, Mich. *1946*
MacMurphey, Robert H., Henry Holt and Co., 257 Fourth Ave., New York, N.Y. *1941*
Macon, Hershal L., 3812 N. Broadway, Knoxville, Tenn. *1934*
MacRae, Duncan, Jr., 40 Kirkland St., Cambridge 38, Mass. *1943*
Macy, C. Ward, Coe Col., Cedar Rapids, Iowa. *1935*
Madden, Anne C. (Mrs.), 710 Berkeley Ave., Orange, N.J. *1941*
Madden, John T., 32 Waverly Pl., New York, N.Y. *1920*
Maddox, James G., U. S Dept. of Agric., Bur. of Agric. Econ., Washington, D.C. *1935*
Madeleine, Sister M. Grace, Immaculata Col., Immaculata, Pa. *1936*
Magdoff, Harry S., Commerce Bldg., Rm. 5518, Washington 25, D.C. *1936*
Magee, James D., New York Univ., Washington Sq., New York 3, N.Y. *1911*
Magee, Mabel A., Wells Col., Aurora, N.Y. *1925*
Magnusson, Leifur, 816 Chalfonte Dr., Alexandria, Va. *1924*
Magoon, Donald W., 131 Frazer St., Findlay, Ohio. *1943*
Magowan, John H., British Embassy, Washington, D.C. *1943*
Magrath, C. B., 199 Birch St., Winnetka, Ill. *1944*
Maguire, T. Paul, 2930 Tangley, Houston 5, Tex. *1943*
Maher, Amy G., 12 Quincy St., Chevy Chase, Md. *1925*
Mahoney, J. R., Univ. of Utah, Salt Lake City, Utah. *1942*
Malick, Clay P., Univ. of Colorado, Dept. of Econ., Boulder, Colo. *1943*
Malin, Max, 2107 Ft. Davis St., S.E., Washington 20, D.C. *1944*
Malin, Patrick M., 3 Garford Rd., Oxford, England. *1930*
Mallery, Otto T., 9006 Crefeld St., Philadelphia, Pa. *1942*
Malone, Carl C., Story City, Iowa. *1941*
Malone, William, P.O. Box 508, Pensacola, Fla. *1944*
Malott, E. Orth, 139 E. 35th St., New York 16, N.Y. *1929*
Malott, Edward O., Jr., 139 E. 35th St., New York 16, N.Y. *1941*
Maltbie, Milo R., 233 Broadway, New York 7, N.Y. *1898*
Mandel, Bernard, 312 N. Thomas St., Arlington, Va. *1940*
Mandeville, Merten J., Univ. of Illinois, 314 Commerce Bldg., Urbana, Ill. *1946*
Manes, Alfred, Indiana Univ., School of Bus., Bloomington, Ind. *1936*
Mangold, George B., 3764 Olympiad Dr., Los Angeles, Calif. *1910*

Manhart, Lewis F., 128 Crim St., Bowling Green, Ohio. *1942*
Manly, Lewis F., Tufts College, Mass. *1928*
Mann, Fritz K., 25 Williams Lane, Chevy Chase, Md. *1936*
Manuel, Milton L., Kansas State Col., Dept. of Econ. and Soc., Manhattan, Kans. *1946*
***Marburg,** Theodore, 14 W. Mt. Vernon Pl., Baltimore, Md. *1890*
Marburg, Theodore F., Princeton Univ., Dept. of Econ. and Soc. Inst., Princeton, N.J. *1938*
Marcks, Oliver D., 1515 Seminole Ave., Detroit 14, Mich. *1943*
Marcum, Mrs. Leocade L., 1728 N. Rhodes St., No. 277, Arlington, Va. *1943*
Marcus, Edward, 700 Ocean Ave., Brooklyn 26, N.Y. *1943*
Marget, Arthur W., Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1926*
Margolis, Julius, 43 Concord Ave., Belmont, Mass. *1944*
Margolis, Milton J., 1319 Grand Ave., Dayton 7, Ohio. *1944*
Marie, Sister Jean, Immaculata Col., Immaculata, Pa. *1943*
Marie, Sister Clement, St. Francis Col., Joliet, Ill. *1944*
Markham, Jesse W., 514 N. 25th St., Richmond, Va. *1944*
Marks, Bernard J., 616 37th St., Des Moines, Iowa. *1942*
Marks, Marvin M., 1968 Iuka Ave., Columbus 1, Ohio. *1945*
Marquard, Elva, 1112 16th St., N.W., Washington 6, D.C. *1940*
Marquardt, Philomena L., 2702 30th St., S.E., Apt. A-250, Washington 20, D.C. *1935*
Marquis, Ralph W., PNW Forest Exp. Sta., 423 U. S. Court House, Portland 5, Ore. *1929*
Marschak, Jakob, Univ. of Chicago, Dept. of Econ., Chicago 37, Ill. *1939*
Marsh, Charles F., 705 Powell St., Williamsburg, Va. *1929*
Marsh, Donald B., Columbia Univ., Barnard Col., New York, N.Y. *1941*
Marshall, George, 38 E. 57th St., New York, N.Y. *1928*
Marshall, Leon C., 7007 Rolling Rd., Chevy Chase 15, Md. *1904*
Marshall, Stewart M., 430 Nevada Ave., Palo Alto, Calif. *1933*
Martin, Boyce F., 315 Guthrie St., Louisville 2, Ky. *1940*
Martin, Edgar W., Illinois Col., Jacksonville, Ill. *1940*
Martin, James W., 241 Tohama Rd., Lexington, Ky. *1923*
Martin, Joel L., 225 E. 11th St., New York 3, N.Y. *1945*
Martin, Margaret E., 1118 N. Kenilworth St., Arlington, Va. *1938*
Martin, Oscar R., Univ. of Nebraska, Lincoln, Neb. *1911*
Martin, Robert F., 4125 Garrison St., Washington 16, D.C. *1939*
Martino, Juan R., Box 296, Bayamón, P.R. *1941*
Marx, Daniel, Jr., Dartmouth Col., Dept. of Econ., Hanover, N.H. *1941*
Marx, Werner, 83-80 118th St., Kew Gardens, L.I., N.Y. *1944*
Masiko, Peter, Jr., 6020 Addison St., Chicago, Ill. *1937*
Mason, Edward S., 9 Channing St., Cambridge, Mass. *1934*
Mason, John E., 106 George Mason Dr., N., Arlington, Va. *1940*
Mason, William E. (Pfc.), CIC Det., Hq., 3rd Army, A.P.O. 403, c/o Postmaster, New York, N.Y. *1938*
Massel, Jean M. (Mrs. Mark S.), c/o Mark S. Massel, Bell, Boyd and Marshall, 135 S. La Salle St., Chicago, Ill. *1941*
Massel, Mark S., Bell, Boyd and Marshall, 135 S. La Salle St., Chicago, Ill. *1936*
Masson, Robert L., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1923*
Master, Martin H., 2052 N. 6th St., Philadelphia, Pa. *1942*
Masterson, J. G., 487 Michigan Ave., N.E. Washington 17, D.C. *1944*
Mateyo, George K., McKinsey and Co., 60 E. 42nd St., New York 17, N.Y. *1942*
Matheson, Kenneth G., 3487 S. Wakefield St., Arlington, Va. *1944*
Mathy, Leonard, Univ. of Washington, Col. of Econ. and Bus., Seattle 5, Wash. *1946*
Matlock, Clifford C., 6501 14th St., N.W., Washington 12, D.C. *1943*
Matteson, James S., 902 Fidelity Bldg., Duluth, Minn. *1919*
***Mattioli,** Raffaele, via Bigli 15, Milan, Italy. *1938*
Mauldon, Frank R. E., Univ. of Western Australia, Nedlands, Perth, Western Australia. *1930*
Maurer, Lucille S. (Mrs.), 1432 Girard St., N.W., Apt. 405, Washington 9, D.C. *1943*
Maurer, William J., 108 Overlook Ave., Leonia, N.J. *1940*
Maverick, Lewis A., 1501 Midvale Ave., Los Angeles 24, Calif. *1939*
Max, William D., 208 Sterling St., Brooklyn 25, N.Y. *1921*
Maxwell, James A., 2034 Eye St., N.W., Washington, D.C. *1925*
Maxwell, Joanna H., Slingerlands, N.Y. *1945*
May, Elizabeth S. (Mrs. Geoffrey), 2828 Chain

Bridge, Rd., N.W., Washington, D.C. *1935*
†**May,** George O., 56 Pine St., New York, N.Y. *1908*
May, Herbert K., 931 Longfellow, N.W., Apt. 302, Washington 11, D.C. *1944*
May, John W., 5556 Bartlett Ave., Pittsburgh 17, Pa. *1940*
May, Richard A., 187 Carrolton Rd., Manor Country Club, Rockville, Md. *1927*
May, Stacy, 21 E. 66th St., New York, N.Y. *1920*
Mayer, Joseph, 722 Jackson Pl., N.W., Washington 6, D.C. *1921*
Mayer, Joseph H., 1228 Eye St., N.W., Apt. 711, Washington 5, D.C. *1943*
Mayer, Leo Kenneth, 6 Polo Rd., Great Neck, L.I., N.Y. *1935*
Mayer, Robert W., Univ. of Illinois, Dept. of Econ., Urbana, Ill. *1933*
Mayer, Thomas, Incoming Records Separation CTR "B," Camp Shelby, Miss. *1946*
Mayhill, Roger, Delphi, Ind. *1945*
Maynard, Eugene L., 1414 Gregory, Wilmette, Ill. *1929*
Maynard, Harold H., Ohio State Univ., Col. of Com., Columbus 10, Ohio. *1921*
Mayo, Robert P., 327 Parkland Pl., S.E., Apt. 1, Washington 20, D.C. *1943*
McAllister, Philip S., 1895 N. Craig Ave., Altadena, Calif. *1942*
McBride, John W., 3504 Third St., N., Arlington, Va. *1929*
McCabe, David A., Herrontown Rd., Princeton, N.J. *1909*
McCahan, David, 607 Strath Haven Ave., Swarthmore, Pa. *1934*
McCalley, John W., 1900 F St., N.W., Apt. 702, Washington 6, D.C. *1945*
McClelland, Mary E., Assoc. of Life Insurance Presidents, 165 Broadway, New York, N.Y. *1941*
McClintic, Joseph O., 1080 N. Chester Ave., Pasadena, Calif. *1937*
McClung, Reid L., Univ. of Southern California, Los Angeles, Calif. *1915*
McCollough, Elzy V., Tarkio Col., Tarkio, Mo. *1936*
McColm, George T., 51 Oxford St., Cambridge 38, Mass. *1944*
McComas, Frederick W., Jr., 1137 Bergen St., Brooklyn 16, N.Y. *1946*
McConagha, William A., 932 E. Commercial St., Appleton, Wis. *1925*
McConahey, James M., 2031 11th Ave., N., Seattle, Wash. *1941*
McConnell, Joseph L., Univ. of Illinois, Dept. of Econ., Urbana, Ill. *1942*
McCormack, Alfred, 4701 Fulton St., N.W., Washington, D.C. *1941*
McCracken, Duane, Univ. of Minnesota, Vincent Hall, Rm. 3, Minneapolis 14, Minn. *1946*
McCracken, E. M., Univ. of Miami, Coral Gables 34, Fla. *1946*
McCracken, Harlan L., Louisiana State Univ., Himes Hall, Baton Rouge, La. *1933*
McCracken, Paul W., Fed. Res. Bank, Res. Dept., Minneapolis 2, Minn. *1942*
McCrea, Roswell C., 127 Second St., Garden City, N.Y. *1899*
McCreary, James W., 311 N. Humboldt St., San Mateo, Calif. *1938*
McCutchen, George, 3 University Campus, Columbia, S.C. *1943*
McDermott, Mary E., Atlantic Refining Co., 260 S. Broad St., Philadelphia, Pa. *1942*
McDiarmid, Orville J., 4131 N. Henderson Rd., Arlington, Va. *1939*
McDonald, Joseph L., Hanover, N.H. *1925*
McDonald, Roy W., 39 Claremont Ave., New York 27, N.Y. *1945*
McDonnell, R. P. S., Army and Navy Club, Washington 6, D.C. *1945*
McDonough, Charles A., 18 Tremont St., Boston, Mass. *1914*
McEwen, Robert J., Weston Col., Weston 93, Mass. *1941*
McFeaters, Marvin C., 313 North West St., Falls Church, Va. *1941*
McGann, Paul W., 2700 Wisconsin Ave., N.W., Washington, D.C. *1942*
McGarry, Edmund D., Univ. of Buffalo, Buffalo, N.Y. *1923*
McGinley, James J., America, 329 W. 108th St., New York, N.Y. *1942*
McGrath, William H., Yarrow Point, Bellevue, Wash. *1919*
McGraw, Booker T., 3036 Park Pl., N.W., Washington, D.C. *1931*
McGregor, Harlan E., 3828 S. Capital St., Washington 20, D.C. *1937*
McGrew, John Gilbert, 14004 Viola Ave., Cleveland, Ohio. *1941*
McGuire, Carl W., 2116½ Arapahoe Ave., Boulder, Colo. *1937*
McGuire, Christine H., 4363 Oakenwald, Chicago 15, Ill. *1941*
McGuire, Constantine E., Cosmos Club, 1520 H St., Washington, D. C. *1922*
McIntyre, Francis E., FEA, 2408 Temp. U, Washington, D.C. *1938*
McIsaac, Archibald M., 15 Hawthorne Ave., Princeton, N.J. *1925*
McKay, Marion K., Univ. of Pittsburgh, Pittsburgh, Pa. *1921*
McKay, Richard, 3136 Wellington Rd., Parkfairfax, Alexandria, Va. *1943*
McKee, Captain W., Economic and Business Found., New Wilmington, Pa. *1937*
McKenzie, Blanche V. (Mrs. Lionel W., Jr.),

2171 E. 19th St., Brooklyn 29, N.Y. *1944*
McKenzie, Lionel W., Jr., 2171 E. 19th St., Brooklyn 29, N.Y. *1944*
McKinley, Gordon W., 1560 E. Broad St., Columbus, Ohio. *1946*
McKinley, Samuel J., 59 Sargent St., Newton 58, Mass. *1928*
McKinney, David H., 317 Shelby St., Frankfort, Ky. *1936*
McLaren, Walter W., Williams Col., Williamstown, Mass. *1911*
McLaughlin, Glenn E., 3053 Ordway St., N.W., Washington 8, D.C. *1929*
McManus, Thomas F., Bur. of Int. Rev., Washington, D.C. *1935*
McMillan, S. Sterling, Indiana Univ., Dept. of Econ., Bloomington, Ind. *1943*
McMullan, Wilbur N., Montgomery Ave. and Paper Mill Rd., Chestnut Hill, Pa. *1931*
McMurray, Hugh D., 400 Stratmore Ave., Pittsburgh, Pa. *1938*
McMurray, Joseph P., 120 C St., N.E., Washington 2, D.C. *1944*
McNatt, Emmett B., Univ. of Illinois, 226 Commerce Bldg., Urbana, Ill. *1934*
McNaughton, Wayne L., Univ. of California, Col. of Bus. Admin., Los Angeles, Calif. *1936*
McNeill, Clarence E., Univ. of Nebraska, Lincoln, Neb. *1919*
McPeters, W(illiam) Liddon, 714 Fillmore St., Corinth, Miss. *1945*
McPherson, James R., Boston Univ., Col. of Bus. Admin., 695 Commonwealth Ave., Boston, Mass. *1946*
McPherson, William H., 6625 Chestnut St., Chevy Chase, Md. *1923*
McPherson, Woodrow W., North Carolina State Col., Dept. of Agric. Econ., Raleigh, N.C. *1946*
McVey, Frank L., 249 Shady Lane, Lexington, Ky. *1895*
Mead, Edward S., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1934*
Means, Gardiner C., R. 1, Box 43, Vienna, Va. *1926*
Mears, Charles D., 623 Oneida Pl., N.W., Washington 11, D.C. *1945*
Mears, Eliot G., Box 1498, Stanford University, Calif. *1917*
Mee, John F., Indiana Univ., Bloomington, Ind. *1946*
Meehan, M. Joseph, 810 Dahlia St., N.W., Washington, D.C. *1940*
Meehling, Charles F., 332 E. 90th St., New York 28, N.Y. *1945*
Meek, Gertrude P., Florida State Col. for Women, Box 114, Tallahassee, Fla. *1931*
Meek, Howard B., Cornell Univ., Ithaca, N.Y. *1929*
Meek, Wilbur T., New York Univ., School of Com., Washington Sq., New York 3, N.Y. *1946*
Meeker, Royal, 625 Whitney Ave., New Haven, Conn. *1903*
Mehl, Paul, U. S. Dept. of Agric., Poultry Br., Produc. and Market. Admin., Washington, D.C. *1919*
Mehlman, Harry, Soc. Sec. Bd., 709 Lenox Bldg., Washington 25, D.C. *1944*
Meier, Gerald M., Reed Col., Portland 2, Ore. *1943*
Melcher, William, 1873 Glencoe Rd., Winter Park, Fla. *1934*
Melder, Frederick E., Clark Univ., Worcester 3, Mass. *1934*
Mellin, Gilbert M., c/o Mrs. Ruth P. Mellin, 3140 Epworth, Cincinnati, Ohio. *1940*
Melton, R. B., Univ. of Arkansas, Fayetteville, Ark. *1945*
Mendershausen, Horst, Bennington Col., Bennington, Vt. *1943*
Mendez M., Jorge A., Grad. Col., Princeton, N.J. *1946*
Mendieta, Francisco A., Quinta Mendieta, Managua, Nicaragua, Central America. *1939*
Mennis, Edmund A., 128 W. 80th St., New York 24, N.Y. *1942*
Merchant, Ely O., 122 E. 42nd St., Rm. 3816, New York, N.Y. *1910*
Meredith, L(ewis) Douglas, Nat. Life Insurance Co., Montpelier, Vt. *1929*
Meriam, Richard S., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1914*
Merkt, Oswald E. D., 926 Morgan Ave., Drexel Hill, Pa. *1942*
Merrill, Ezra, 500 Rutherford Ave., Boston, Mass. *1938*
Metzger, Charles R., Asso. of Motion Picture Producers, 5504 Hollywood Blvd., Hollywood 28, Calif. *1929*
Meyendorff, Alexander L., Soviet Purch. Com., 1610 Park Rd., N.W., Rm. 114, Washington 10, D.C. *1944*
Meyer, Balthasar H., 3327 P St., N.W., Washington, D.C. *1889*
Meyer, Carl, 231 S. La Salle St., Chicago, Ill. *1918*
Meyer, Charles H., 904 Garland Ave., Takoma Park 12, Md. *1943*
***Meyer,** Eugene, Washington Post, Washington, D.C. *1910*
Meyer, Rauer, 3369 S. Stafford St., Arlington, Va. *1943*
Meyers, Albert L., 6413 Oakridge Ave., Chevy Chase 15, Md. *1930*
Meyrowitz, Alvin, 4204 Kaywood Dr., Mt. Rainier, Md. *1940*

Michels, Rudolf K., 3 Dorchester Rd., Scarsdale, N.Y. *1929*
Michelsen, James D., 30 Bristol Ave., Saltburn-by-the-Sea, Yorkshire, England. *1946*
Mickey, Joseph F., 664 Aldine Ave., Chicago 13, Ill. *1944*
Micoleau, Henri L., Gen. Motors Corp., 1775 Broadway, New York, N.Y. *1935*
Mighell, Albert T., R.R. 1, Yorkville, Ill. *1925*
Mikesell, Raymond F., 3021 S. Columbus St., Fairlington, Arlington, Va. *1936*
Mikoljon, Stanley J., 85 Rooney St., Clifton, N.J. *1933*
Milam, Paul W., Univ. of Arkansas, Col. of Bus. Admin., Fayetteville, Ark. *1940*
Miles, John, 1417 N St., N.W., Washington, D.C. *1943*
Miles, Stephen B., Jr., Lockheed Aircraft Corp., Burbank, Calif. *1944*
Millard, Mark, 61 Broadway, New York 6, N.Y. *1944*
Miller, Adolph C., 2230 S St., N.W., Washington, D.C. *1901*
Miller, Arjay R., Gen. Del., Detroit, Mich. *1942*
Miller, Benjamin O., Virginia Poly. Inst., Blacksburg, Va. *1938*
Miller, Edmund T., Univ. Sta., Austin, Tex. *1909*
Miller, Frances M. (Mrs.), 2707 Webster St., Mt. Rainier, Md. *1943*
Miller, Glenn W., Ohio State Univ., Dept. of Econ., Columbus 10, Ohio. *1936*
Miller, Henry S., 42 Commerce St., New York 14, N.Y. *1936*
Miller, John F., 3306 Circle Hill Rd., Alexandria, Va. *1943*
Miller, John L., Univ. of Wisconsin, 206 Extension Bldg., Madison 6, Wis. *1939*
Miller, John P., 73 Fernwood Rd., Hamden, Conn. *1936*
Miller, John W., 264 Sheridan Rd., Winnetka, Ill. *1939*
Miller, Merton H., 3937 S St., S.E., Washington 20, D.C. *1945*
Miller, Paul F., 129 Montgomery Ave., Bala-Cynwyd, Pa. *1945*
Miller, Paul L., 105 W. Mt. Ida Ave., Alexandria, Va. *1924*
Miller, Seymour M., Grad. Col., Princeton, N.J. *1945*
Miller, Sidney L., Univ. of Pittsburgh, School of Bus. Admin., Pittsburgh 13, Pa. *1920*
Miller, Sidney L., Jr., c/o Sidney L. Miller, Univ. of Pittsburgh, School of Bus. Admin., Pittsburgh 13, Pa. *1945*
Miller, Stanley L., 67 Riverside Dr., New York, N.Y. *1939*
Miller, Taulman A., Indiana Univ., Dept. of Econ., Bloomington, Ind. *1936*
Millikan, Max F., 1235 29th St., N.W., Washington 7, D.C. *1937*
Millis, Harry A., Univ. of Chicago, Dept. of Econ., Chicago 37, Ill. *1895*
§**Mills,** A. L., Jr., 1736 S.W. Prospect Dr., Portland 1, Ore. *1942*
Mills, Frederick C., Columbia Univ., New York 27, N.Y. *1920*
Mills, John A., 1019 13th St., Wilmette, Ill. *1941*
Mills, Mark C., Indiana Univ., Dept. of Econ., Bloomington, Ind. *1923*
Milroy, Robert R., Indiana Univ., School of Bus., Bloomington, Ind. *1941*
Mindlin, Saul, 2500 K St., N.W., Apt. 105, Washington 7, D.C. *1943*
Minsky, Hyman P. (T/5), 31303346, Manpower Div., OMGUS, A.P.O. 742, c/o Postmaster, New York, N.Y. *1945*
Mints, Lloyd W., Univ. of Chicago, Box 237 Faculty Exchange, Chicago, Ill. *1922*
Mire, Joseph, 2807 Ridge Rd., Madison, Wis. *1943*
Mises, Ludwig, 777 West End Ave., New York 25, N.Y. *1924*
Mitch, George F., 511 E. Hamilton Ave., State College, Pa. *1926*
Mitchell, Agnes W. (Mrs.), 2223 H St., N.W., Apt. 206, Washington 7, D.C. *1934*
Mitchell, George S., 906 Lullwater Rd., N.E., Atlanta, Ga. *1931*
Mitchell, George W., 4717 Woodland Ave., Western Springs, Ill. *1930*
Mitchell, Harry A., 2038 Pine St., New Orleans, La. *1933*
Mitchell, James M., 70 Oakland Pl., Buffalo, N.Y. *1914*
Mitchell, John M., 303 N. Park Dr., Arlington, Va. *1943*
Mitchell, S. Robert, 2223 H St., N.W., Apt. 206, Washington 7, D.C. *1944*
Mitchell, Waldo F., 1508 N. 7th St., Terre Haute, Ind. *1920*
Mitchell, Walter, Jr., 290 Broadway, New York, N.Y. *1944*
***Mitchell,** Wesley C., 2 Horatio St., New York, N.Y. *1903*
Mitchell, William N., 8159 S. Rhodes Ave., Chicago, Ill. *1946*
Mittelman, Edward B., 2032 Belmont Rd., N.W., Washington, D.C. *1920*
Model, Mark, 1076 S. Edison St., Columbia Forest, Arlington, Va. *1943*
Modigliani, Franco, 429 B. 120th St., Rockaway Park, N.Y. *1942*
Modlin, George M., University of Richmond, Va. *1940*
Moe, Floyd B., Virginia Junior Col., Virginia, Minn. *1946*

Moeller, Charles, Jr., Haggers Lane, Fair Haven, N.J. *1943*
Moffat, James E., 925 E. Hunter Ave., Bloomington, Ind. *1915*
Mogilnitsky, Theodosi A., Loyola Univ., 6525 Sheridan Rd., Chicago, Ill. *1935*
Mohn, Kermit B., 5 Hawthorne Pl., Nyack, N.Y. *1945*
Molano M., Alvaro, Washington Univ., Lee Hall, St. Louis, Mo. *1946*
Molodovsky, Nicholas, White, Weld and Co., 40 Wall St., New York 5, N.Y. *1945*
Moloney, John F., Nat. Cottonseed Products Asso., 731 Sterick Bldg., Memphis, Tenn. *1938*
Monchow, Helen C., 913 N. Wayne St., Arlington, Va. *1929*
Monroe, Arthur E., 5 Concord Ave., Cambridge 38, Mass. *1915*
Monroe, Day, Univ. of Washington, School of Home Econ., Seattle 5, Wash. *1926*
Montague, Gilbert H., 152 E. 37th St., New York, N.Y. *1926*
Montealegre, Eduardo, c/o Ministerio de Economia Palacio Nacional, Guatemala, Guatemala, Central America. *1944*
Montgomery, Royal E., Cornell Univ., Dept. of Econ., Ithaca, N.Y. *1931*
Moonitz, Maurice, 903 College Ave., Menlo Park, Calif. *1935*
Moore, Charles W., Box 176, Wyncote, Pa. *1939*
Moore, Floyd W., Western State Teachers Col., Kalamazoo, Mich. *1927*
Moore, Gordon S., 5704 Hudson St., Dallas 6, Tex. *1943*
Moore, Henry L., Cornwall, N.Y. *1896*
Moore, O. Ernest, 33 Liberty St., New York, N.Y. *1944*
Moore, W. J., Richmond, Ky. *1934*
Moore, William H., 1 Scott Circle, Washington, D.C. *1934*
Morehouse, Edward W., 76 Library Pl., Princeton, N.J. *1925*
Morey, Lloyd, Univ. of Illinois, Urbana, Ill. *1942*
Morgan, Alfred D., 1900 F St., N.W., Washington 3, D.C. *1945*
Morgan, Charles S., 5721 Chevy Chase Pkwy., Washington, D.C. *1917*
Morgan, Gerald, Hyde Park, N.Y. *1920*
Morgan, James N., 9 Norman St., Cambridge 38, Mass. *1944*
Morgan, J(oseph) Theodore, Harvard Univ., Dept. of Econ., Cambridge 38, Mass. *1941*
Morgan, Julian D., 1741 Vermont, Lawrence, Kans. *1946*
Morgan, Lorne T., Univ. of Toronto, Dept. of Polit. Sci., Toronto 5, Ont., Canada. *1932*
Morgan, Ora S., Columbia Univ., School of Bus., New York 27, N.Y. *1933*
Morgenstern, Oskar, Princeton Univ., Dept. of Econ., Princeton, N.J. *1945*
Morgner, Aurelius, Univ. of Minnesota, School of Bus., Minneapolis 14, Minn. *1941*
Morley, Burton R., Box 1994, University, Ala. *1941*
Morosoff, Serge P., Pacific Mills, 1 W. Central Ave., Newark, N.J. *1943*
Morrill, Chester, Fed. Res. Bd., Washington, D.C. *1924*
Morris, Bruce R., 1921 Seminary Rd., Parkfairfax, Alexandria, Va. *1935*
Morris, Victor P., Univ. of Oregon, Col. of Soc. Sci., Eugene, Ore. *1926*
Morrison, Jay, 3801 E. Pike St., Seattle 22, Wash. *1935*
Morrison, Loyle A., 1616 S. Lynn St., Arlington, Va. *1923*
Morrison, Paul L., 2115 Central Park Ave., Evanston, Ill. *1928*
Morrison, Vernon G., 44 W. Norris Rd., Box 174, Norris, Tenn. *1936*
Morrissy, Elizabeth, Notre Dame Col., N. Charles St., Baltimore, Md. *1941*
Morrow, Curtis H., 3 West Ct., Waterville, Me. *1922*
Mors, Wallace P., 5522 Kimbark Ave., Chicago 37, Ill. *1940*
Morse, Herbert C., 416 N. Thomas St., No. 3, Arlington, Va. *1940*
Morse, Hermann C., 1335 W. Hollywood Ave., Chicago, Ill. *1929*
Morse, Richard L., Iowa State Col., Iowa Agric. Exp. Sta., Ames, Iowa. *1941*
Morson, William T., 203 Cathedral Ave., Hempstead, N.Y. *1937*
Morss, Noel, 568 South St., Needham, Mass. *1933*
Mortara, Giorgio, Comissão Censitária Nacional, Avenida Pasteur, 404, Rio de Janeiro, Brazil, South America. *1941*
Mortenson, William P., 12 Meadow, Bronxville, N.Y. *1935*
Morton, Joseph E., Nat. Bur. of Econ. Res., Hillside, W. 254th St. and Independence Ave., New York 63, N.Y. *1936*
Morton, Walter A., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1928*
Mosak, Jacob L., 4201 Kaywood Dr., Mt. Rainier, Md. *1940*
Moscani, David L., 83 Chestnut St., Ridgewood, N.J. *1942*
Mosk, Sanford A., Univ. of California, Dept. of Econ., Berkeley, Calif. *1936*
Mossé, Robert, 2924 26th St., N.E., Washington, D.C. *1942*
Moulton, Elma S., 1628 Montague St., Washington 11, D.C. *1944*
Moulton, Harold G., Brookings Inst., 722 Jack-

son Pl., N.W., Washington 6, D.C. *1911*
Mountin, William J., Executive Office of the President, Bur. of the Budget, 593 Market St., San Francisco 5, Calif. *1943*
Mowbray, Albert H., Univ. of California, 119 South Hall, Berkeley, Calif. *1924*
Mucha, Frank A., FHA, 1001 Vermont Ave., N.W., Rm. 805, Washington, D.C. *1940*
Mudge, Edmund W., 1000 Morewood Ave., Pittsburgh, Pa. *1934*
Mudgett, Bruce D., Univ. of Minnesota, Minneapolis 14, Minn. *1918*
Mueller, Frederick W., Jr., De Paul Univ., School of Com., 64 E. Lake St., Chicago, Ill. *1935*
Muench, Carl, Wartburg Col., Waverly, Iowa. *1945*
Muhlbach, Walter F., 15 Lawrence St., Gardner, Mass. *1945*
Mui, Kan C., 105 Mercer St., Princeton, N.J. *1945*
Mulcahy, Richard E., Alma Col., Alma, Calif. *1943*
Mullenbach, Philip, 2601 16th St., S., Apt. 610, Arlington, Va. *1942*
Muller, Charlotte (Mrs.), 150 W. 106th St., New York 25, N.Y. *1945*
Mulliken, Jean H. (Mrs. Otis E.), 6429 31st Pl., N.W., Washington, D.C. *1942*
Mulliken, Otis E., 6429 31st Pl., N.W., Washington, D.C. *1939*
Mulvihill, Donald F., 5529 Fourth St., S., Arlington, Va. *1941*
Mumford, Marian B., Wis. Citizens' Public Expenditure Survey, 340 Washington Bldg., Madison 3, Wis. *1945*
Mund, Vernon A., Univ. of Washington, Dept. of Econ., Seattle, Wash. *1929*
Munier, Joseph D., St. Patrick's Seminary, Menlo Park, Calif. *1944*
Munk, Frank, 4609 College Ave., College Park, Md. *1941*
Muntz, Earl E., New York Univ., School of Com., Dept. of Econ., Washington Sq., New York 3, N.Y. *1923*
Murad, Anatol, 504 Marguerita Ave., Santa Monica, Calif. *1941*
Murchison, Claudius T., Cotton-Textile Inst., 320 Broadway, New York, N.Y. *1928*
Murdoch, Arthur E., Harper Rd., Kerrville, Tex. *1911*
Murphy, Eleanor G. (Mrs. Henry C.), U. S. Treasury Dept., Div. of Res. and Statis., Washington, D.C. *1938*
Murphy, Henry C., U. S. Treasury Dept., Div. of Res. and Statis., Washington, D.C. *1926*
Murphy, Mary E., Hunter Col., New York 21, N.Y. *1935*
Murray, Evan B., Utah State Agric. Col., School of Com., Logan, Utah. *1940*
Murray, Merrill G., 6607 Delfield St., Chevy Chase 15, Md. *1933*
Murray, S. G., Univ. of Toronto, Dept. of Polit. Econ., Toronto, Ont., Canada. *1944*
Murray, William G., Iowa State Col., 207 Agric. Annex, Ames, Iowa. *1927*
Musbach, William F., 1007 26th Rd., S., Arlington, Va. *1942*
Musgrave, Richard A., Fed. Res. Bd., Washington, D. C. *1937*
Myers, A(aron) Howard, 294 Washington St., Boston, Mass. *1931*
Myers, Charles A., M.I.T., Indus. Rela. Sec., Cambridge, Mass. *1936*
Myers, Howard B., 6512 Western Ave., Chevy Chase 15, Md. *1927*
Myers, John H., Northwestern Univ., School of Com., Evanston, Ill. *1942*
Myers, Lawrence B., University Club, Madison, Wis. *1946*
Myers, Margaret G. (Mrs. B. H. Beckhart), Vassar Col., Box 72, Poughkeepsie, N.Y. *1941*
Myers, Robert J., OMGUS, Manpower Div., A.P.O. 742, c/o Postmaster, New York, N.Y. *1934*
Myers, Walter R., Univ. of Minnesota, 114 Vincent Hall, Minneapolis 14, Minn. *1922*

Nadler, Marcus, New York Univ., 90 Trinity Pl., New York 6, N.Y. *1924*
Naessens, Maurits, Belgian Ministry of Finance, 35 Rue Franklin, Brussels, Belgium. *1946*
Nagel, August W., 4422 Dittmar Rd., Arlington, Va. *1944*
Nagelberg, Morton S., 5 S. 16th Ave., Mt. Vernon, N.Y. *1943*
Nahl, Perham C., 1131 Leonard Pl., Evanston, Ill. *1936*
Naidel, Simon, 2027 Park Rd., N.W., Washington 10, D.C. *1941*
Nason, Thelma S. (Mrs.), 508 W. 114th St., New York, N.Y. *1943*
Nathan, Otto, 55 E. 10th St., New York 3, N.Y. *1931*
Nathan, Robert R., 1308 18th St., N.W., Washington, D.C. *1937*
Neal, Alfred C., 334 Beacon St., Boston 16, Mass. *1941*
Nef, John U., Univ. of Chicago, Chicago 37, Ill. *1929*
Neff, Frank A., 1625 N. Vassar, Wichita 6, Kans. *1935*
Neff, Philip, Haynes Found., 2324 S. Figueroa St., Los Angeles, Calif. *1943*
Neifeld, Marion, 15 Washington St., Newark, N.J. *1944*
Neifeld, Morris R., 15 Washington St., Newark, N.J. *1924*
Neisser, Hans P., 128 Bellmore St., Floral Park, L.I., N.Y. *1933*

Neiswanger, William A., Jr., Univ. of Illinois, Col. of Com., Dept. of Econ., Urbana, Ill. *1924*

Nelson, Benjamin N., Univ. of Chicago, Faculty Exchange, Chicago 37, Ill. *1946*

Nelson, Eastin, Univ. of Texas, Dept. of Econ., Austin 12, Tex. *1944*

Nelson, Edward G., 1213 Ohio St., Lawrence, Kans. *1938*

Nelson, Esther E., Hudson View Gardens, J55, 183rd St. and Pinehurst Ave., New York 33, N.Y. *1943*

Nelson, George J., 983 Park Ave., New York 28, N.Y. *1943*

Nelson, James C., 3824 Porter St., N.W., Washington, D.C. *1936*

Nelson, Peter, A. and M. Col., Stillwater, Okla. *1929*

Nelson, Richard W., Bur. of Int. Rev., Bus. and Indus. Res. Com., Washington, D.C. *1922*

Nelson, Roger S., 1615 Riggs Pl., N.W., Washington 9, D.C. *1945*

Nelson, Saul, Econ. Div., Office of M. I. Gov. U. S., A.P.O. 742, c/o Postmaster, New York, N.Y. *1939*

Nerboso, Ruth W. (Mrs.), 4635 Hillside Rd., S.E., Washington, D.C. *1943*

Nerlove, Samuel H., Univ. of Chicago, School of Com., Chicago 37, Ill. *1923*

Neufeld, Maurice F., 160 Giles St., Ithaca, N.Y. *1946*

Neuhoff, Ralph R., 414 Rialto Bldg., 220 N. Fourth St., St. Louis 2, Mo. *1944*

Neumann, Bruno R., 527 Fifth Ave., New York 17, N.Y. *1945*

Neustadt, Richard E. (Lt.), Administrative Planning Div., Code OL, Navy Dept., Bur. of Supplies and Accounts, Washington 25, D.C. *1945*

Newark, Christine, Ohio State Univ., School of Home Econ., Columbus 10, Ohio. *1945*

Newbury, Frank D., Westinghouse Elec. and Mfg. Co., 306 Fourth Ave., P.O. Box 1017, Pittsburgh 30, Pa. *1945*

Newcomer, Mabel, Vassar Col., Poughkeepsie, N.Y. *1915*

Newman, Herbert E., Univ. of Delaware, Dept. of Econ. and Bus. Admin., Newark, Del. *1940*

Newman, Philip C., 2525 Ontario Rd., N.W., Washington 9, D.C. *1942*

Newman, William H., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1939*

Nicholaus, Herbert A., Lake Forest Col., Lake Forest, Ill. *1945*

Nicholls, William D., 126 University Ave., Lexington, Ky. *1929*

Nicholls, William H., Univ. of Chicago, Dept. of Econ., Chicago 37, Ill. *1942*

Nichols, John R., 97 W. Frambes Ave., Columbus 1, Ohio. *1945*

Nichols, Leonard D., 207 W. Lexington Ave., Danville, Ky. *1942*

Nicol, Helen O. (Mrs. Allen H.), 4823 Chevy Chase Dr., Chevy Chase, Md. *1943*

Nicolaysen, Albin G., 526 Broad St. Bank Bldg., Trenton, N.J. *1942*

Nicols, Alfred, 541 Comstock Ave., Los Angeles 24, Calif. *1943*

Niebyl, Elizabeth C. H. (Mrs. Karl H.), Stony Sides, Westport, Essex Co., N.Y. *1946*

Niebyl, Karl H., Stony Sides, Westport, Essex Co., N.Y. *1943*

Niehaus, Fred R., Univ. of Colorado, School of Bus., Boulder, Colo. *1935*

Nielander, William A., 2122 Suitland Ter., S.E., Fairfax Village, Washington 20, D.C. *1939*

Nielsen, A. Evald, 618 12th St., N.W., Washington 5, D.C. *1945*

Nielsen, Alice L., 3711 Horner Pl., S.E., Washington 20, D.C. *1944*

Nielsen, Axel, Wilh. Smidtsvej 7, Gentofte, Denmark. *1946*

Nielsen, Oswald, 5401 Kellogg Ave., Minneapolis 10, Minn. *1929*

Nightingale, Edmund A., Univ. of Minnesota, School of Bus. Admin., Minneapolis 14, Minn. *1936*

Nilsson, Arthur E., Harvard Univ., Grad. School of Bus. Admin., Morgan Hall, Soldiers Field, Boston, Mass. *1927*

Nittinger, Ralph A., Univ. of Pennsylvania, Wharton School, Econ. Dept., Philadelphia 4, Pa. *1944*

Nixon, John H., 912 19th St., N.W., Washington 6, D.C. *1943*

Noble, Clarence V., Agric. Exp. Sta., Gainesville, Fla. *1919*

Noble, John H., Armour and Co., Union Stock Yards, Chicago, Ill. *1941*

Noetzel, Arthur J., John Carroll Univ., Dept. of Bus. Admin., Cleveland, Ohio. *1940*

Noetzel, Grover A. J., Temple Univ., Philadelphia 22, Pa. *1934*

Nolan, Raymond F., 117 Newcomb Rd., Tenafly, N.J. *1945*

Nolen, Russell M., Univ. of Illinois, Urbana, Ill. *1931*

Nordin, J. A., Iowa State Col., 308 Agric. Annex, Ames, Iowa. *1946*

Nordstrom, Oscar L., Augustana Col., Rock Island, Ill. *1937*

Norgren, Paul H., American Embassy, Ottawa, Ont., Canada. *1941*

Norman, Charles B., 1448 W. Euclid, Stockton, Calif. *1938*

Norman, Theodore, 6629 Chestnut St., Chevy Chase, Md. *1941*

Norris, Nilan (Lt.), 9th Statis. Control Unit, A.P.O. 244, c/o Postmaster, San Francisco, Calif. *1936*

North, Max H., 2202 S. 26th St., Arlington, Va. *1944*
Northrop, Mildred B., Bryn Mawr Col., Bryn Mawr, Pa. *1942*
Northrup, Herbert R., 42 W. Pondfield Rd., Apt. 5F, Bronxville 8, N.Y. *1941*
Norton, John R., St. John's Univ., Col. of Arts and Sci., 96 Schermerhorn St., Brooklyn, N.Y. *1941*
Norton, Thomas L., Col. of the City of New York, School of Bus. and Civic Admin., 17 Lexington Ave., New York 10, N.Y. *1925*
Nourse, Edwin G., Brookings Inst., 722 Jackson Pl., N.W., Washington 6, D.C. *1911*
Novotny, Frances K., 2311 Andrews Ave., New York, N.Y. *1944*
Nowicki, Robert J., 1928 S. 31st St., Milwaukee 4, Wis. *1945*
Noyes, C. Reinhold, 455 51st St., New York, N.Y. *1930*
Nugent, Rolf, Russell Sage Found., 130 E. 22nd St., New York, N.Y. *1936*
Nulsen, Robert H., 10776 Rochester Ave., Los Angeles, Calif. *1938*
Nunn, William L., Univ. of Minnesota, Minneapolis 14, Minn. *1937*
Nurkse, Ragnar, Inst. for Advanced Study, Princeton, N.J. *1945*
Nurnberg, Max, c/o Aiken, 447 Locust St., Edgewood, Pa. *1942*
Nussbaum, Frederick L., Univ. of Wyoming, Laramie, Wyo. *1943*
Nystrom, Paul H., Columbia Univ., School of Bus., New York 27, N.Y. *1924*

Oakes, Eugene E., 2222 I St., N.W., Washington, D.C. *1931*
Oakes, Ralph H., 5400 Greenwood Ave., Chicago, Ill. *1942*
Oakley, Cyrus K., 4256 Botanical, St. Louis, Mo. *1937*
O'Beirne, Bert E., Michigan State Col., Dept. of Econ., East Lansing, Mich. *1942*
Obering, William F., 609 W. Copper Ave., Albuquerque, N.M. *1941*
O'Connell, Donald W., 501 W. 113th St., New York 25, N.Y. *1940*
O'Connor, J. Michael, Box 3213 Terminal Annex, Los Angeles 54, Calif. *1934*
Oderkirk, A. D., Kirkland, Ill. *1941*
O'Donnell, Al F., Marlyn Apts., Cathedral Ave. at 39th, Washington, D.C. *1937*
O'Donnell, Walter G., Ohio State Univ., 102 Commerce Bldg., Columbus 10, Ohio. *1944*
Oehlert, Benjamin, Jr., Coca-Cola Co., 515 Madison Ave., 31st Fl., New York 22, N.Y. *1943*
Ogden, Susie E., 409 W. Monroe St., Carbondale, Ill. *1946*
O'Grady, John, 1317 F St., N.W., Washington, D.C. *1916*
Ohsol, Johann G., 1815 Riverside Dr., New York, N.Y. *1913*
O'Leary, Edmund B., Univ. of Dayton, Dayton, Ohio. *1941*
O'Leary, James J., Wesleyan Univ., Box 58, Middletown, Conn. *1941*
O'Leary, Paul M., Cornell Univ., Goldwin Smith Hall, Ithaca, N.Y. *1929*
Oliver, E. L., 5631 Potomac Ave., N.W., Washington, D.C. *1928*
Oliver, Henry M., Jr., Univ. of North Carolina, Abernathy Hall, Chapel Hill, N.C. *1938*
Oliver, Robert W., 1338 Talbert Ter., S.E., Washington 20, D.C. *1944*
Olsen, Herluf V., Dartmouth Col., Tuck School, Hanover, N.H. *1924*
Olson, Albert L., 1819 Park Rd., Huntington, W.Va. *1937*
Olson, Oscar A., McPherson Col., McPherson, Kans. *1940*
Olson, Paul R., Univ. of Iowa, Iowa City, Iowa. *1945*
Omohundro, Edgar H., 4011 N. 11th St., Arlington, Va. *1940*
O'Neill, Harry J., St. Louis Univ., School of Com. and Fin., St. Louis, Mo. *1928*
Opie, Redvers, British Embassy, Washington, D.C. *1926*
Opton, Irene B., 320 E. 53rd St., New York 22, N.Y. *1942*
Orchard, John E., Columbia Univ., School of Bus., New York 27, N.Y. *1940*
Ormes, Ferguson R., Wabash Col., Crawfordsville, Ind. *1940*
Orton, W(illiam) Aylott, 135 Vernon St., Northampton, Mass. *1922*
Osborne, Ernest L., 3130 Wisconsin Ave., N.W., Washington, D.C. *1934*
Osgood, Roy C., First Nat. Bank, 38 S. Dearborn St., Chicago, Ill. *1904*
O'Shea, Vincent J., 260 Arleigh Rd., Douglas Manor, L.I., N.Y. *1932*
Osias, Max S., 416 N. Thomas St., Arlington, Va. *1940*
Ostlund, Harry J., Univ. of Minnesota, School of Bus., Minneapolis 14, Minn. *1920*
Ostrander, F. Taylor, Jr., 21 Cohawney Rd., Scarsdale, N.Y. *1943*
Ostrum, Alfred C., 5731 Chestnut St., Philadelphia, Pa. *1943*
Otte, Herman F., Columbia Univ., 619 School of Bus., New York 27, N. Y. *1942*
Otteson, Schuyler F., 236 N. Washington, Delaware, Ohio. *1945*
Otto, Erich A., 341 Sylvan Ave., Leonia, N.J. *1931*

Overton, R. C., Northwestern Univ., School of Com., Evanston, Ill. *1946*
Owen, E(dgar) Lyle, Univ. of Tulsa, Tulsa 4 Okla. *1942*
Owen, William V., Purdue Univ., Dept. of Hist., Econ., and Gov., La Fayette, Ind. *1939*
Owens, Richard N., George Washington Univ., Washington, D.C. *1923*
Oxenfeldt, Alfred R., 5912 14th St., N.W., Washington, D.C. *1946*
Oxenfeldt, Gertrude E. (Mrs. Alfred R.), 5912 14th St., N.W., Washington, D.C. *1943*

Pabst, William R., 1963 39th St., N.W., Washington 7, D.C. *1932*
Packard, Howard M., 3516 N. Bay Dr., Racine, Wis. *1944*
Packard, Richard M., 99A Aspen Ave., Auburndale, Mass. *1936*
Paden, Don W., A-3 Buchanan Bldg., Presidential Gardens, Alexandria, Va. *1943*
Pagani, John, Jr., Kenwood, Calif. *1939*
Page, Anne (Mrs.), American Asso. of Univ. Women, 1634 Eye St., N.W., Washington, D.C. *1936*
Palmer, Dwight L., Dwight Palmer and Associates, 1656 N. Cherokee, Los Angeles 4, Calif. *1940*
Palmer, Edgar Z., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1927*
Palmer, Gladys L., Univ. of Pennsylvania, 3440 Walnut St., Philadelphia 4, Pa. *1920*
Palmer, Walter S., Jr., 201 State St., Reno, Nev. *1934*
Palmer, William B., Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1934*
Palyi, Melchior, 211 W. Wacker Dr., Chicago, Ill. *1927*
Pancoast, Elinor, Goucher Col., Baltimore, Md. *1923*
Pancoast, Omar, Jr., OMGUS, Berlin, Germany, Food and Agric. Br., A.P.O. 742, c/o Postmaster, New York, N.Y. *1941*
Papier, William, 1018 Studer Ave., Apt. A, Columbus, Ohio. *1940*
Paris, James D., 83 Old Pond Rd., Great Neck, N.Y. *1935*
Parker Glen L., 1718 N. Utah St., Arlington, Va. *1946*
Parker, James S., 2613 S. Veitch St., Arlington, Va. *1936*
Parker, Sanford S., 25 Chittenden Ave., New York 33, N.Y. *1943*
Parkin, Norman C., Allies Inn, N.W., Washington, D.C. *1944*
Parkinson, Royal, American Optical Co., Southbridge, Mass. *1941*
§**Parmelee,** Julius H., Bur. of Railway Econ., Transportation Bldg., 17th and H Sts., Washington 6, D.C. *1917*
Parmelee, Rexford C., 4700 47th St., N.W., Washington, D.C. *1931*
Parrish, John B., U. S. Bur. of Labor Statis., 226 W. Jackson, Chicago 6, Ill. *1944*
Parrott, D'Arcy, 65 Broadway, New York 6, N.Y. *1940*
§**Parry,** Carl E., Fed. Res. Bldg., Washington 25, D.C. *1910*
Parry, Corliss L., Marvin Ridge Rd., New Canaan, Conn. *1935*
Parsons, Kenneth H., Univ. of Wisconsin, 304 Agric. Hall, Madison, Wis. *1937*
Parsons, O. A., 509 S. Third, Bozeman, Mont. *1939*
Partner, James W., 2015 Orrington Ave., Evanston, Ill. *1946*
Paschal, Elizabeth, 3012 N. Calvert St., Baltimore, Md. *1934*
Paschke, John W., 4140 36th St., S., Arlington, Va. *1944*
Pasel, Lawrence, 34 E. Main St., Canton, N.Y. *1924*
Paster, Irving, 2803 Pittsfield Blvd., Pittsfield Village, Ann Arbor, Mich. *1946*
Pasvolsky, Leo, 722 Jackson Pl., N.W., Washington 6, D.C. *1939*
Patinkin, Don, 1315 E. 53rd St., Chicago 15, Ill. *1946*
Paton, William A., 2203 Hill St., Ann Arbor, Mich. *1917*
Patterson, Ernest M., Univ. of Pennsylvania, Philadelphia 4, Pa. *1912*
Patterson, John H., 161 E. 37th St., New York 16, N.Y. *1935*
Patterson, R. F., Univ. of South Dakota, School of Bus., Vermillion, S.D. *1946*
Patterson, S(amuel) Howard, Univ. of Pennsylvania, Logan Hall, Philadelphia 4, Pa. *1921*
Patton, Audley E., 72 W. Adams St., Chicago, Ill. *1945*
Patton, Francis L., Hamilton Col., Clinton, N.Y. *1920*
Patton, Robert D., Ohio State Univ., Columbus 10, Ohio. *1927*
Patzig, Rudolph E., 3809 57th Ave., Hyattsville, Md. *1944*
Paul, Allen B., 712 W. Oregon, Urbana, Ill. *1942*
Pawley, Francis R., 3468 Gunston Rd., Alexandria, Va. *1943*
Peach, William N., 900 W. 22nd, Austin, Tex. *1942*
Pearce, C. A., 924 Madison Ave., New York, N.Y. *1933*
Pearson, Beverly S. (Mrs. Norman M.), 5412 Worthington Dr., Washington 16, D.C. *1944*
Pearson, David C., 2610 Las Lunas St., Pasadena, Calif. *1941*

Pearson, Norman M., 5412 Worthington Dr., Washington 16, D.C. *1944*
Pearson, O. P., Automobile Manufacturers Asso., New Center Bldg., Detroit, Mich. *1940*
Pechman, Joseph, Treasury Dept., Div. of Tax Res., Washington, D.C. *1942*
Peck, Gustav, 1757 Que St., N.W., Washington 9, D.C. *1932*
Peck, Harvey W., Syracuse Univ., Maxwell Hall, Syracuse, N.Y. *1922*
Pegrum, Dudley F., Univ. of California, Los Angeles, Calif. *1928*
Peisch, Archibald M., Norwich, Vt. *1919*
Pekelis, Alexander, Grad. Faculty of Polit. and Soc. Sci., 66 W. 12th St., New York 11, N.Y. *1944*
Pelz, Edward J., 114 Morningside Dr., New York 27, N.Y. *1938*
Peppard, Joseph F. (Lt.), Hq. ATSC, TSBRE-7, Area B, Wright Field, Ohio. *1945*
Peradotto, Louis B., 309 10th Ave., San Francisco 18, Calif. *1945*
Peragallo, Edward, Col. of the Holy Cross, Worcester 3, Mass. *1945*
Perceful, Sabin C., Northwestern State Col., Alva, Okla. *1921*
Percus, Philip M., 565 5th Ave., New York, N.Y. *1942*
Perine, Eleanor R. (Mrs. Fred A.), 1435 Edison Ave., Detroit 6, Mich. *1945*
Perine, Fred A., 1435 Edison Ave., Detroit 6, Mich. *1943*
Perkins, John S., 688 Boylston St., Boston, Mass. *1942*
Perlman, Selig, 1805 Rowley Ave., Madison, Wis. *1915*
Perreten, Paul H., American Enterprise Asso., 4 E. 41st St., New York 17, N.Y. *1946*
Perring, Katherine, Bay State Apts. 211, 1701 Massachusetts Ave., N.W., Washington 6, D.C. *1942*
Perry, G(ordon) Neil, Bur. of Econ. and Statis., Weiler Bldg., Victoria, B.C., Canada. *1940*
Perry, Robert H., Everett Harris and Co., 629 S. Spring St., Los Angeles 14, Calif. *1941*
Person, Harlow S., Southlawn Ave., Dobbs Ferry, N.Y. *1901*
Persons, Charles E., 4105 Fessenden St., N.W., Washington, D.C. *1910*
Pescumá, Miguel, El Maestro No. 64, Buenos Aires, Argentina, South America. *1944*
Peters, Iva L. (Mrs.), Fishkill, N.Y. *1922*
Peters, Janet S. (Mrs. Howard), 2615 42nd St., N.W., Washington 7, D.C. *1945*
Peters, L. A. H., Netherlands Economic Mission, 1620 Belmont St., N.W., Washington, D.C. *1942*
Petersen, Elmore, Univ. of Colorado, School of Bus., Boulder, Colo. *1930*
Peterson, Florence, Bur. of Labor Statis., Washington, D.C. *1934*
Peterson, Florence B. (Mrs.), 687 Lincoln Ave., Winnetka, Ill. *1928*
Peterson, G(eorge) Shorey, Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1924*
Peterson, J(ames) Marvin, Miami Univ., Oxford, Ohio. *1932*
Peterson, Mary S. (Mrs.), 304 Princeton Ave., Madison, Wis. *1920*
Peterson, Nicholas E., 96 Abbott Rd., Wellesley Hills, Mass. *1940*
Peterson, Rudolph, 129 S. 13th St., Lewisburg, Pa. *1925*
Pettee, E. W., North Dakota Agric. Col., State Col. Sta., Fargo, N.D. *1944*
Pettee, George S., 36 Snell St., Amherst, Mass. *1944*
Pettee, James C., 4817 25th Rd., N., Arlington, Va. *1936*
Pettengill, Robert B., Univ. of Southern California, Dept. of Econ., Los Angeles, Calif. *1934*
Phelan, Towner, St. Louis Union Trust Co., 323 N. Broadway, St. Louis 2, Mo. *1946*
Phelps, Clyde W., Univ. of Chattanooga, Chattanooga 3, Tenn. *1927*
Phelps, Dudley M., 1601 Morton Ave., Ann Arbor, Mich. *1939*
Phelps, Esmond, 321 St. Charles St., New Orleans, La. *1911*
Phelps, Orme W., Univ. of Chicago, School of Bus., Chicago 37, Ill. *1945*
Philbrook, Clarence, Iowa State Col., Dept. of Econ., Ames, Iowa. *1946*
Phillips, Chester A., 721 N. Linn St., Iowa City, Iowa. *1915*
Phillips, Edmund J., Jr., 2341 Valley Vista Rd., Louisville 5, Ky. *1939*
Phillips, Harold M., c/o Crocker First Nat. Bank, San Francisco 20, Calif. *1944*
Phillips, Merton O., Washington and Lee Univ., Lexington, Va. *1927*
Phillips, Stanley A., 490 Sheridan Rd., Evanston, Ill. *1937*
Phillips, William J., Jr., Southwestern Louisiana Inst., Lafayette, La. *1938*
Phillips, William T., 1018 Valley Dr., Alexandria, Va. *1941*
Phinney, Josiah T., 122 McCartney St., Easton, Pa. *1931*
Phipps, Irving R., 255 Park Ave., Munsey Park, Manhasset, L.I., N.Y. *1929*
Pickett, Ralph R., 1721 E. Wilman Ct., Emporia, Kans. *1925*
Pierce, Lloyd F., Carson-Newman Col., Jefferson City, Tenn. *1945*
Pierson, Frank, 740 Ogden Ave., Swarthmore, Pa. *1940*

Pierson, John H. G., 3424 Que St., N.W., Washington, D.C. *1934*
‡**Pigou,** Arthur C., King's Col., Cambridge, England. *1922*
Pinchbeck, Raymond B., Univ. of Richmond, Richmond, Va. *1923*
Piovia, Frank, 200 N. Trenton St., Arlington, Va. *1945*
Piper, Clarence B., 2195 Orlando Rd., Pasadena, Calif. *1921*
Piquet, Howard S., 2209 Yorktown Rd., N.W., Washington, D.C. *1927*
Pitigliani, Fausto R., 97 Ft. Washington Ave., New York, N.Y. *1938*
Pitt, Courtnay H., Philco Corp., Tioga and C Sts., Philadelphia, Pa. *1936*
Planting, Martin P., 20 W. 36th St., Apt. 507, Kansas City 2, Mo. *1945*
Plaut, Walter, Wardman Park Hotel, Washington 8, D.C., *1944*
Plimsoll, James, Australian Military Mission, Munitions Bldg., Constitution Ave., Washington, D.C. *1945*
Plowman, E(dward) Grosvenor, Schenley Apts., Pittsburgh 13, Pa. *1922*
Plum, Lester V., 10 College Rd., Princeton, N.J. *1940*
Plumley, Alden J., Univ. of Nevada, Dept. of Econ., Reno, Nev. *1928*
Plummer, Wilbur C., Univ. of Pennsylvania, 209 Bennett Hall, Philadelphia 4, Pa. *1925*
Pogue, Joseph E., 18 Pine St., New York 15, N.Y. *1924*
Poindexter, J. Carl, Roanoke Col., Salem, Va. *1939*
Polemis, Zane M., 5649 Dorchester Ave., Chicago 37, Ill. *1944*
Polinsky, Ella J., 1515 16th St., N.W., Washington 6, D.C. *1943*
Pollak, Otto, Bettws-y-Coed, Bryn Mawr, Pa. *1944*
Pollard, George M., 1417 N. Nash St., Arlington, Va. *1938*
Pollock, Dora, 3418 Elaine Pl., Chicago 13, Ill. *1945*
Pollock, Frederick, Int. Inst. of Soc. Res., 90 Morningside Dr., New York 27, N.Y. *1934*
Pollock, Kenneth W., 1415 S. Judson St., Ft. Scott, Kans. *1933*
Polyzoides, Adamantios T., 620 S. Ardmore Ave., Los Angeles 5, Calif. *1940*
Pomerantz, Sidney I., 35 Crown St., Brooklyn 25, N.Y. *1943*
Pond, A. Smith, 1855 High St., Denver, Colo. *1938*
Pond, Addison, 16 Liberty St., Montpelier, Vt. *1939*
Poole, Elmer W., 866 West End Ave., New York 25, N.Y. *1946*
Poole, Kenyon E., Brown Univ., Dept. of Econ., Providence, R.I. *1937*
Poole, William H., 133 Kenaston Ave., Montreal 16, Que., Canada. *1946*
Porter, Arthur R., Jr., 120 S. Fairview Ave., Highland Park, Upper Darby, Pa. *1941*
Porter, Martha, 165 W. 46th St., New York 19, N.Y. *1944*
Porter, Richard L., St. Mary's Col., St. Marys, Kans. *1945*
Posey, Thomas E., West Virginia State Col., Institute, W.Va. *1943*
Posniak, Edward G., 44-C Crescent Rd., Greenbelt, Md. *1945*
Post, A. Alan, State Capitol Bldg., Rm. 445, Sacramento 14, Calif. *1945*
Potter, Alden A., R.F.D. 3, Bethesda, Md. *1942*
Potter, A(lfred) Neal, 6301 Brookville Rd., Chevy Chase 15, Md. *1941*
Potter, E. L., 231 S. 9th St., Corvallis, Ore. *1941*
Potter, Helen, Seton Hill Col., Greensburg, Pa. *1945*
Poulton, Edgar E., 34 Farragut Pl., N.W., Washington 11, D.C. *1942*
Powell, Elmer E., 208 E. High St., Oxford, Ohio. *1943*
Powell, Franklin E., 6409 Knollbrook Dr., Hyattsville, Md. *1944*
Powell, Leona M., American Management Asso., 330 W. 42nd St., New York, N.Y. *1926*
Powell, Weldon, 1003 Pacific Mutual Bldg., Los Angeles 14, Calif. *1924*
Prather, Charles L., 926 Westmoreland Ave., Syracuse 10, N.Y. *1931*
Prather, Robert M., Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago 80, Ill. *1944*
Prehn, Edward C., Jr., 429 Clove Rd., West New Brighton, S.I., N.Y. *1937*
Preinreich, Gabriel A. D., 17 E. 42nd St., New York, N.Y. *1940*
Prentice, James S., Middlebury Col., Middlebury, Vt. *1935*
Presanis, A., Ministry of Finance, 8 Aldford House, Park St., London, W. 1, England. *1945*
Preston, Howard H., 5026 15th Ave., N.E., Seattle, Wash. *1918*
Preston, Stanley W., Box 8415, Univ. Sta., Baton Rouge 3, La. *1933*
Prewitt, Roy A., 2705 Upshur St., Apt. 2, Mt. Rainier, Md. *1940*
Pribram, Karl, 3625 16th St., Washington, D.C. *1939*
Price, Hugh B., Univ. of Kentucky, Dept. of Markets and Rural Fin., Lexington, Ky. *1918*
Prichard, Robert E., 510 Deming Pl., Chicago 14, Ill. *1946*
Prime, John H., New York Univ., School of Com., Washington Sq., New York 3, N.Y. *1925*

Prince, Charles, 1438 Whittier St., N.W., Washington 12, D.C. *1945*
Pritchard, Leland J., Univ. of Kansas, School of Bus., Lawrence, Kans. *1940*
Pritchett, William M., Cornell Univ., 226 Warren Hall, Ithaca, N.Y. *1946*
Puckett, Erastus P., Central Col., Fayette, Mo. *1935*
Puente-Duany, Rafael B., Central América, Oriente, Cuba. *1943*
Puffer, Claude E., Univ. of Buffalo, Dept. of Econ., Buffalo, N.Y. *1941*
Pullen, Robert W., 20 College Ave., Waterville, Me. *1945*
Purdy, Harry L., Missouri Pacific Railroad, Res. Dept., St. Louis, Mo. *1939*
Pyle, John F., Univ. of Maryland, Col. of Bus. and Pub. Admin., College Park, Md. *1926*

Qualls, Le Roy L., Moweaqua, Ill. *1941*
Quantius, Frances W., Ohio State Univ., Col. of Com. and Admin., Columbus 10, Ohio. *1943*
Quigley, Carroll, 4472 Reservoir Rd., N.W., Washington, D.C. *1943*
Quirin, E. Lafayette, 29 Boulevard Rd., Wellesley Hills 82, Mass. *1940*
Quirk, Charles B., 869 Lexington Ave., New York 21, N.Y. *1945*

Rabinowitz, Susannah, 1390 Tewkesbury Pl., N.W., Washington, D.C. *1943*
Radius, Walter A., 3030 Newark St., N.W., Washington, D.C. *1942*
Radvanyi, Laszlo, Donato Guerra 1, desp. 207, Mexico, D.F. *1945*
Rafler, Doris D. (Mrs.), 3200 16th St., N.W., Washington 10, D.C. *1944*
Ramsey, Fredlyn, 2229 Bancroft Pl., N.W., Washington 8, D.C. *1943*
Randall, R. J., Natal Univ. Col., Warwick Ave., Durban, South Africa. *1946*
Rankin, Andrew F., 23 E. Elm Ave., Wollaston 70, Mass. *1946*
Rankin, John O., Box 387, Hayti, Mo. *1937*
Ransom, William L., 33 Pine St., New York, N.Y. *1924*
*__Rappard,__ William E., Valavran, near Geneva, Switzerland. *1911*
Ratchford, Benjamin U., Box 4727, Duke Sta., Durham, N.C. *1929*
Ratcliff, Richard U., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1935*
Ratner, Sidney, 2901 18th St., N.W., Washington 9, D.C. *1939*
Ratzlaff, Carl J., 4315 2nd Rd., N., Arlington, Va. *1932*
Raushenbush, Paul A., 2228 Hillington Green, Madison, Wis. *1923*
Rautenstrauch, Walter, Columbia Univ., New York 27, N.Y. *1940*
Raver, Paul J., 811 N.E. Oregon St., Portland, Ore. *1933*
Ray, Donald P., 2009 15th, N., Arlington, Va. *1944*
Raymaker, Constance L., 100 W. Church St., Oxford, Ohio. *1929*
Raymond, Fred I., 629 W. Washington Blvd., Chicago 6, Ill. *1943*
Raymond, Robert L., Jr., 38 Newbury St., Boston 16, Mass. *1945*
Rea, L. Owens, Wake Forest Col., Wake Forest, N.C. *1931*
Read, George J., 4 Irving Pl., New York, N.Y. *1941*
Read, Leonard E., N.I.C.B., 247 Park Ave., New York 17, N.Y. *1937*
Read, W. Harold, Univ. of Tennessee, School of Bus. Admin., Knoxville, Tenn. *1941*
§**Rebelé,** Ralph H., 4 Montgomery St., San Francisco, Calif. *1941*
Reber, Hugh J., 1 Wall St., New York, N.Y. *1942*
Reddick, Olive I., Hood Col., Frederick, Md. *1930*
Redlich, Fritz L., 42 Oak St., Belmont, Mass. *1937*
Redpath, John M., R.F.D. 3, Rockville, Md. *1924*
Reece, B. Carroll, 1129 House Office Bldg., Washington, D.C. *1942*
Reed, Edward W., Univ. of Louisville, Dept. of Econ., Louisville 8, Ky. *1940*
Reed, Harold L., 422 Cayuga Heights Rd., Ithaca, N.Y. *1912*
Reed, Spencer H., 3839 Garfield St., N.W., Washington, D.C. *1946*
Reedy, Theodore W., 316 N. Thomas St., Arlington, Va. *1940*
Reeve, Joseph E., 4745 Lambeth Rd., Bethesda, Md. *1931*
Reich, Joseph, 1675 Grand Concourse, Bronx, New York, N.Y. *1940*
Reich, Nathan, 3135 Sedgwick Ave., New York 63, N.Y. *1936*
Reid, Margaret G., U. S. Dept. of Agric., Bur. of Home Econ., Washington 25, D.C. *1932*
Reierson, Roy L., 80 Cranberry St., Brooklyn 2, N.Y. *1929*
Reifman, Alfred, 128 Wayne Pl., S.E., Washington 20, D.C. *1946*
Reifman, Lucille (Mrs. Alfred), 128 Wayne Pl., S.E., Washington 20, D.C. *1946*
Reilly, Edward E., Univ. of Western Ontario, London, Ont., Canada. *1936*
Reilly, Milton A., Simpson Col., Indianola, Iowa. *1946*
Reimann, Guenter, 6815 Clyde St., Forest Hills 2, L.I., N.Y. *1944*

Reiner, James, 20 E. Cedar St., Chicago 11, Ill. *1936*
Reinertsen, Peter A., 3500 39th St., N.W., Washington 16, D.C. *1943*
Reinhardt, Hedwig, 779 Riverside Dr., New York, N.Y. *1942*
Reinhardt, John F., 2700 Fidelity Bldg., Kansas City 6, Mo. *1939*
Remer, Charles F., 1016 Martin Pl., Ann Arbor, Mich. *1923*
Renne, Roland R., Montana State Col., Bozeman, Mont. *1931*
Reubens, Beatrice G. (Mrs. Edwin P.), 4507 S. Capitol St., Washington, D.C. *1944*
Reubens, Edwin P., 4507 S. Capitol St., Washington, D.C. *1946*
Reuss, Frederick G., 3017 Wayne Ave., Baltimore 7, Md. *1945*
Reuss, Margaret M. (Mrs.), 199 Birch St., Winnetka, Ill. *1942*
Reynolds, Alice J. (Mrs. Richard A.), Baldwin, Md. *1940*
Reynolds, Lloyd G., Management Labor Center, 333 Cedar St., New Haven, Conn. *1937*
Reynolds, Thomas J., 137 Bellevue Ave., Upper Montclair, N.J. *1941*
Reynolds, William A., 350 E. 54th St., New York 22, N.Y. *1944*
Rhodes, Edward E., 233 Elwood Ave., Newark 4, N.J. *1923*
Ribeiro Filho, João de Souza, Praca 15 de Novembro, 10, 5 andar, Departamento Legal, Rio de Janeiro, Brazil, South America. *1945*
Ricardo, Rita, 487 Washington St., Brookline, Mass. *1945*
Rice, Lloyd P., 4 Webster Ter., Hanover, N.H. *1915*
Rice, Stuart A., Bur. of the Budget, Washington, D.C. *1929*
Rich, Chester L., Cornell Col., Mt. Vernon, Iowa. *1944*
Rich, Leo H., 34 Oxford Rd., Scarsdale, N.Y. *1943*
Richards, Cecil S., Univ. of the Witwatersrand, Milner Park, Johannesburg, South Africa. *1932*
Richards, Helen P. (Mrs.), Asso. of American Railroads, 30 Vesey St., New York 7, N.Y. *1943*
Richards, Howard E., 3073 S. Buchanan St., Fairlington, Arlington, Va. *1940*
Richards, Leo J., 1901 F St., N.W., Washington 6, D.C. *1928*
Richardson, John ff., Office of Australian Gov. Trade Com., 630 Fifth Ave., Rm. 426, New York, N.Y. *1943*
Richman, Leonard D., Parkshore, 1755 E. 55th St., Chicago, Ill. *1943*
Richter, John H., Dept. of Agric., Office of For. Agric. Rela., Washington, D.C. *1946*
Ricketts, Faye M., Univ. of Wichita, Wichita, Kans. *1938*
Riddle, Jesse H., 36 Gramercy Pk., New York, N.Y. *1917*
Riddle, N. Gilbert, Ohio State Univ., Col. of Com., Columbus 10, Ohio. *1925*
Riefler, Dorothy B. (Mrs. Winfield W.), Inst. for Advanced Study, School of Econ. and Politics, Princeton, N.J. *1943*
Riefler, Winfield W., Inst. for Advanced Study, School of Econ. and Politics, Princeton, N.J. *1937*
Riegel, John W., Univ. of Michigan, 103 Tappan Hall, Ann Arbor, Mich. *1936*
Riggleman, John R., 6612 Hillandale Rd., Chevy Case 15, Md. *1923*
Riley, Donald C., R.F.D. 5, Box 264, Valley View Dr., Alexandria, Va. *1928*
Riley, H. E., 2248 N. Quebec St., Arlington, Va. *1934*
Riley, Roderick H., 5609 Madison St., Bethesda, Md. *1932*
Ring, Sister Mary Ignatius, Notre Dame Col. Lib., South Euclid, Ohio. *1943*
Ringo, Miriam K. (Mrs.), 800 S. Washington St., Alexandria, Va. *1942*
Ripps, Evelyn L., 121-8 Hancock, 3665 38th St., N.W., Washington 16, D.C., *1943*
‡**Rist,** Charles, 18 rue du Parc le Clagny, Versailles, France. *1922*
Ritchie, Fred, U. S. Bur. of Labor Statis., 420 Williamson Bldg., Cleveland 14, Ohio. *1936*
Ritz, Philip M., 1271 New Hampshire Ave., N.W., Washington, D.C. *1943*
Robb, T(homas) Bruce, Kansas City Fed. Res. Bank, Kansas City, Mo. *1921*
Robb, William C., Univ. of Illinois, Col. of Com., Urbana, Ill. *1937*
Robbins, Chandler, 47 N. Fullerton Ave., Montclair, N.J. *1943*
Robbins, Dorothy, 344 W. 72nd St., New York 23, N.Y. *1945*
Robbins, Edwin C., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1912*
Robbins, Sidney, 4501 Airway Rd., Dayton, Ohio. *1940*
Roberts, David R., 1543 Key Blvd., Arlington, Va. *1938*
Roberts, Evan O., West Virginia Univ., Dept of Econ. and Bus. Admin., Morgantown, W.Va. *1942*
Roberts, Frank L., c/o R. S. Roberts, 8923 Langdon Ave., Sepulveda, Calif. *1943*
Roberts, George B., Nat. City Bank of New York, New York, N.Y. *1932*

Roberts, Harold S., 7015 Wapakoneta Rd., Washington 16, D.C. *1937*
Roberts, Hazel V., 526 W. 113th St., New York 25, N.Y. *1925*
Roberts, Merrill J., 603 N. Kendrick Ave., Glendive, Mont. *1944*
Roberts, Thomas, 1100 Walnut St., Philadelphia 7, Pa. *1945*
Roberts, Verl E., 225 E. 73rd St., New York 21, N.Y. *1942*
Roberts, Warren A., 140 Moncure Dr., Alexandria, Va. *1945*
Roberts, William H., P.O. Box 673, Portland, Me. *1944*
‡**Robertson,** D. H., London School of Economics, Houghton St., London, W.C. 2, England, *1938*
Robertson, Harrison M., 1600 W. Hill St., Louisville, Ky. *1943*
Robertson, Laurie, 3133 Dudley St., Lincoln, Neb. *1946*
Robey, Ralph W., Columbia Univ., New York, N.Y. *1927*
Robinson, Dwight E., c/o Mrs. C. S. Whitman, 455 E. 57th St., New York 22, N.Y. *1946*
Robinson, J. A., 815 18th St., N.W., Washington 6, D.C. *1945*
Robinson, Leland R., 2 W. 45th St., New York, N.Y. *1916*
Robinson, Myles E., 3900 Hamilton, Hyattsville, Md. *1937*
Robinson, Roland I., 5327 Flint Dr., Washington 16, D.C. *1945*
Robinson, Thomas H., 66 Thurlow Rd., Hampstead, Que., Canada. *1933*
Robock, Stefan H., Berlin, Wis. *1946*
Robotka, Frank, Iowa State Col., Ames, Ia. *1923*
Rockafellow, Robert, Rhode Island State Col., Kingston, R.I. *1935*
Roderick, David O. M., 5714 S. Blackstone Ave., Chicago, Ill. *1945*
Rodkey, Robert G., School of Bus. Admin., Ann Arbor, Mich. *1919*
Rodrigues, Eduardo L., Rua Barao de Petropolis 557, Rio de Janeiro, Brazil, South America. *1944*
Roe, Frederick, 135 S. La Salle St., Chicago, Ill. *1932*
Roelse, Harold V., Fed. Res. Bank of New York, Reports Dept., New York, N.Y. *1930*
Rogers, Beatrice A., M.I.T., 77 Massachusetts Ave., Cambridge, Mass. *1941*
Rogers, H. Barrett, Northwestern Univ., Tech. Bldg., Rm. 352, Evanston, Ill. *1946*
Rogers, Herbert O., 8506 Lynwood Pl., Chevy Chase, Md. *1928*
Rogin, Leo, Univ. of California, Dept. of Econ., Berkeley, Calif. *1942*
Rohrlich, George F., 2013 New Hampshire Ave., N.W., Washington 9, D.C. *1942*
Rollefson, Arthur M., 5701 43rd Ave., Hyattsville, Md. *1946*
Roller, George H., 8806 Flower Ave., Silver Spring, Md. *1944*
Rolph, Earl R., Univ. of California, Dept. of Econ., Berkeley, Calif. *1945*
Rolph, John G., 227 E. 57th St., New York 22, N.Y. *1940*
Ronk, Sally S. (Mrs. Stewart), 63 Franklin Ave., Staten Island 1, N.Y. *1942*
Ronk, Samuel E., R.F.D. 1, Springfield, Mass. *1940*
Roos, Charles F., Econometric Inst., 500 Fifth Ave., New York 18, N.Y. *1946*
Roose, Kenneth D., 15 Rock View Rd., Hamden, Conn., *1940*
***Roper,** Elmo, West Redding, Conn. *1944*
Ropes, Ernest C., 3715 Canal Rd., N.W., Washington 7, D.C. *1944*
Rorem, C. Rufus, American Hospital Asso., 18 E. Division St., Chicago, Ill. *1927*
Rosa, Joseph (M/Sgt.), 33189108, Hq. U. S. Forces in Austria, Fin. Div., USACA, A.P.O. 777, c/o Postmaster, New York, N.Y., *1942*
Rosa, Robert, Fed. Res. Bank, Fed. Res. Sta., New York, N.Y. *1941*
Rosden, George E., 729 15th St., N.W., Washington, D.C. *1943*
Rose, Albert, 107 Yorkville Ave., Toronto, Ont., Canada. *1941*
Rose, James V., 9617 Baltic Rd., Cleveland, Ohio. *1938*
Rose, Joseph R., 5466 Montgomery Ave., Philadelphia, Pa. *1934*
Rosen, George, 781 Fulton St., Brooklyn, N.Y. *1944*
Rosen, Harold H., Steel Br., CPA. 4042 Soc. Sec. Bldg., Washington 25, D.C. *1945*
Rosen, Josef, P.O. Box 422, Basle 1, Switzerland. *1945*
Rosen, Martin, 2221 80th St., Brooklyn 14, N.Y. *1946*
Rosen, Martin M. (Capt.), USACA, Fin. Div., Hq. U. S. Forces in Austria, A.P.O. 777, c/o Postmaster, New York, N.Y. *1943*
Rosenbaum, Clarence H., 1666 Bayard Park Dr., Evansville, Ind. *1942*
Rosenborg, Ansgar, League of Nations, c/o Inst. for Advanced Study, Princeton, N.J. *1944*
Rosenfelt, Mark, Spencerville, Md. *1943*
Rosenfield, Myron, 27 New York Ave., White Plains, N.Y. *1940*
Rosenson, Alexander M., 6010 13th Pl., N.W., Apt. 204, Washington, D.C. *1940*
***Rosenthal,** Lessing, 105 W. Monroe St., Chicago, Ill. *1891*
Rosenthal, Richard L., 509 Madison Ave., New York 22, N.Y. *1938*

Ross, Arthur M., 2122 Aurelius Rd., Holt, Mich. *1946*
Ross, Edwin B., 907 Rogers Bldg., Vancouver, B.C., Canada. *1916*
Ross, Emerson, 6034 Ridge Dr., Washington 16, D.C. *1939*
Ross, Harry A., Borden Co., Bur. of Econ., 350 Madison Ave., New York, N.Y. *1921*
Ross, James A., Jr., 1641 35th St., N.W., Washington, D.C. *1926*
Ross, Jane N. (Mrs. Arthur M.), 2122 Aurelius Rd., Holt, Mich. *1946*
Ross, Maurice O., Butler Univ., Indianapolis, Ind. *1933*
Ross, Morris A., 3816 Davis Pl., N.W., Washington, D.C. *1943*
Ross, Murray, 2724 Porter St., N.W., Washington, D.C. *1936*
Ross, Samuel B., 2702 Wisconsin Ave., N.W., Apt. 800, Washington, D.C. *1944*
Ross, Stanley C., Smith Col., Dept. of Econ., Northampton, Mass. *1945*
Rossell, Robert T., 747 Union Arcade, Pittsburgh, Pa. *1921*
Rossetti, Victor H., Farmers and Merchants Nat. Bank, Los Angeles, Calif. *1912*
Roswell, David S., 38 Bon Air Ave., New Rochelle, N.Y. *1921*
Roth, Lester, 100 S. La Salle St., Chicago, Ill. *1911*
Rothbard, Murray N., 370 Central Park W., New York, N.Y. *1946*
Rowe, Harold B., 412 Highland Dr., Chevy Chase, Md. *1939*
Rowe, Kenneth W., 606 Euclid Ave., Glen Ellyn, Ill. *1936*
Rowe, William H., U. S. Dept. of Agric., Fed. Crops Ins. Corp., Washington, D.C. *1935*
Rowland, James P., Chestnut Hill Col., Dept. of Econ., Philadelphia 18, Pa. *1939*
Rowlands, David T., Univ. of Pennsylvania, 211 Logan Hall, Philadelphia 4, Pa. *1933*
Rozman, David, Massachusetts State Col., Dept. of Econ., Amherst, Mass. *1934*
Rubin, Edward P., 135 S. La Salle St., Rm. 2240, Chicago, Ill. *1940*
Rudolph, L. M., 5706 Sixth Ave., Brooklyn 20, N.Y. *1945*
Ruggles, Catherine G., 4 Lowell St., Cambridge, Mass. *1936*
Ruggles, Clyde O., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1911*
Ruggles, Richard, 4 Lowell St., Cambridge 38, Mass. *1942*
Ruhmer, Otto E. M., 39 Lenox Rd., Brooklyn 26, N.Y. *1937*
Rukeyser, Merryle S., 150 W. Pinebrook Dr., New Rochelle, N.Y. *1931*
Runge, Edmond J. (Capt.), The Pentagon, Rm. 5A334, Washington, D.C. *1940*
Rusby, Paul, 548 Riverside Dr., Apt. 3A, New York, N.Y. *1936*
Rush, Richard H., U. S. Dept. of Com., Bur. of For. and Dom. Com., Rm. 3838, Washington, D.C. *1944*
Russel, Albert W., 11930 Carlton Rd., Cleveland, Ohio. *1921*
Russell, J. Johnson, III, 700 Westmont Dr., Alhambra, Calif. *1944*
Russell, Lewine H. (Mrs.), P.O. Box 732, Paoli, Pa. *1934*
Russell, Ralph, Dept. of Interior, Fish and Wildlife Service, Washington, D.C. *1942*
Russell, Samuel B., 1245 Luzerne St., Reading, Pa. *1942*
Russell, Stanley A., 120 Broadway, Rm. 1615, New York, N.Y. *1920*
Russell, Warren L., 9424 220th St., Queens Village, L.I., N.Y. *1928*
Ryan, Franklin W., 3156 Key Blvd., Arlington, Va. *1921*
Ryan, Frederick L., 82 Central Ave., Sausalito, Calif. *1930*
Ryden, Elihu D., 2264 Pittsfield Blvd., Pittsfield Village, Ann Arbor, Mich. *1940*
Ryder, Oscar B., 803 Prince St., Alexandria, Va. *1922*

Saavedra García, Octavio, 21 No. 107, Apt. 6, Vedado, Havana, Cuba. *1945*
Sabghir, Aaron S., 4085 Minnesota Ave., N.E., Washington 19, D.C. *1943*
Saby, Rasmus S., Cettysburg Col., Gettysburg, P. *1914*
Sachs, Alexander, 72 Wall St., Rm. 1000, New York 5, N.Y. *1944*
Sackett, Ralph L., 631 San Esteban Ave., Coral Gables 34, Fla. *1946*
Sacks, Seymour, 3451 Giles Pl., New York, N.Y. *1946*
Sáenz, Francisco R., 2700 Que St., N.W., Washington 7, D.C. *1946*
Sakolski, Aaron M., 270 Riverside Dr., New York, N.Y. *1904*
Saks, John I., 2320 41st St., N.W., Washington, D.C. *1938*
Salant, Aaron B., 1155 Park Ave., New York 28, N.Y. *1934*
Salant, Walter S., Office of Stabilization Administrator, 1206 Fed. Res. Bldg., Washington, D.C. *1940*
Salant, William A., 2120 16th St., N.W., Washington 9, D.C. *1945*
Salera, Virgil, 4123 Howe St., Oakland 11, Calif. *1935*
Saletan, Alberta L. (Mrs.), 301 W. 108th St., New York, N.Y. *1942*

Salinger, Joseph, 353 E. 77th St., New York, N.Y. *1943*
Salter, Leonard A., Jr., Univ. of Wisconsin, Dept. of Agric. Econ., Madison 6, Wis. *1945*
Salz, Arthur, Ohio State Univ., Dept. of Econ., Columbus 10, Ohio. *1945*
Sametz, Arnold W., 184 Grad. Col., Princeton, N.J. *1946*
Sammons, Wheeler, 536 Deming Pl., Chicago, Ill. *1935*
Samoore, Arthur S., Illinois Col., Jacksonville, Ill. *1945*
Samuelson, Carl A., P.O. Box JS, Chicago 90, Ill. *1936*
Samuelson, Paul A., M.I.T., Cambridge, Mass. *1938*
Sandale, Arthur, c/o H. Schenkel, 221 Ave. F, Brooklyn 18, N.Y. *1941*
Sandelin, G. Lincoln, 1427 Chapin St., N.W., Apt. 25, Washington, D.C. *1943*
Sanders, Thomas H., 223 Morgan Hall, Soldiers Field, Boston, Mass. *1919*
Sanderson, Fred H., 3359 S. Wakefield St., Arlington, Va. *1944*
Sanford, George W., Case School of Applied Science, Cleveland 6, Ohio. *1933*
Sapir, Herbert M., Franklin Forest, R.F.D. 1, East Falls Church, Va. *1938*
Saposs, David J., 1928 Belmont Rd., N.W., Washington, D.C. *1928*
Sard, Edward L., 3014 Gainesville St., S.E., Washington, D.C. *1943*
Sargent, Noel, 14 W. 49th St., New York, N.Y. *1924*
Sarnoff, Milton M., 1541 Union St., Brooklyn 13, N.Y. *1941*
Sarosi, Oliver, 830 S. Michigan Ave., Chicago 5, Ill. *1940*
Sasuly, Max, 1029 Vermont Ave., Rm. 106, Washington 5, D.C. *1938*
Saucerman, Robert C., 121 N. Hamilton, Madison, Wis. *1941*
Sauer, Nora E., Civ. Pers., Hq. Comd., USFET, A.P.O. 757, c/o Postmaster, New York, N.Y. *1945*
Saulnier, Raymond J., 106 Morningside Dr., Apt. 88, New York, N.Y. *1936*
Saunders, Stanley A., 143 Spadina Rd., Toronto, Ont., Canada. *1931*
Saunders, Willard J., 345 Fulton St., San Francisco 2, Calif. *1944*
Saurino, Benedict, Sun Oil Co., 1608 Walnut St., Philadelphia, Pa. *1942*
Saville, Lloyd, 2710 30th St., S.E., Apt. B-359, Washington 20, D.C. *1943*
Sawwaf, Husni A., 2215 Wyoming Ave., Washington 8, D.C. *1938*
Saxton, Pierre W., 195 Broadway, New York, N.Y. *1918*
Schaaf, Carl H., 11 Portland Pl., London, W. 1, England. *1944*
Schafer, Robert, 2500 Massachusetts Ave., N.W., Apt. 8, Washington, D.C. *1941*
Schaffner, Joseph H., 1552 34th St., N.W., Washington 7, D.C. *1924*
Schaffner, Philip P., 8005 Eastern Ave., Apt. 308, Silver Spring, Md. *1945*
§**Scheider,** Charles F., III, 306 E. Glendale Ave., Alexandria, Va. *1943*
Scheinkopf, Harold P., 13 E. 16th Ave., Columbus, Ohio. *1945*
Scheinman, Daniel, 105 Chester Ct., Peoria, Ill. *1941*
Schepmoes, Douglas F., 4444 Wilson Blvd., Arlington, Va. *1945*
Scherer, Joe (Lt.), O2037804, USA Training Gp., AFPAC, A.P.O. 500, c/o Postmaster, San Francisco, Calif. *1944*
Schickele, Rainer, 1749 Harvard St., N.W., Washington 9, D.C. *1936*
Schiff, Erich, 1426 Saratoga Ave., N.E., Washington, D.C. *1940*
Schiff, Marie S. (Mrs. Erich), 1426 Saratoga Ave., N.E., Washington, D.C. *1943*
Schiff, Michael, New York Univ., Grad. School of Bus. Admin., 90 Trinity Pl., New York 6, N.Y. *1942*
Schlagenhauf, Milton J., 360 Huntington Ave., Boston, Mass. *1922*
Schlatter, William J., 302 W. Florida Ave., Urbana, Ill. *1940*
Schlink, Frederick J., Consumers' Research, Washington, N.J. *1931*
Schmelzle, William K., Univ. of California, Dept. of Econ., Berkeley, Calif. *1942*
Schmidt, Andrew B., Univ. of Arizona, Tucson, Ariz. *1939*
Schmidt, Carl K., Jr., Illinois Public Aid Com., 160 N. La Salle St., Rm. 2000, Chicago, Ill. *1946*
Schmidt, Edward B., Univ. of Nebraska, 103 Law Bldg., Lincoln, Neb. *1934*
Schmidt, Emerson P., U. S. Chamber of Commerce, Washington, D.C. *1934*
Schmidt, Orvis A., 418 Cummings Lane, Chevy Chase 15, Md. *1940*
Schmidt, Raymond R. H., 5446 N. Kent Ave., Milwaukee 11, Wis. *1942*
Schneider, John H., Jr., 68 Stuart Ave., Malverne, N.Y. *1944*
Schneider, Leon G., 1663 Lincoln Pl., Brooklyn, N.Y. *1946*
Scholz, Karl W. H., Univ. of Pennsylvania, Logan Hall, Philadelphia 4, Pa. *1921*
Schrag, William A., 7522 Walnut Lane, Philadelphia 38, Pa. *1940*
Schramm, John E., Sulzbacher, Granger and Co., 111 Broadway, New York 6, N.Y. *1944*

Schroll, Sister M. Alfred, Mt. St. Scholastica Col., Atchison, Kans. *1940*
§**Schubart,** W. H., 44 Wall St., New York, N.Y. *1943*
Schuller, George J., 840 West End Ave., New York, N.Y. *1939*
Schultz, Arch D., Ohio Chamber of Commerce, 820 Huntington Bank Bldg., Columbus, Ohio. *1940*
Schultz, Robert, Brothers Col., Drew Univ., Madison, N.J. *1932*
Schultz, Robert S., III, Econometric Inst., 500 5th Ave., New York 18, N.Y. *1945*
Schultz, Theodore W., Univ. of Chicago, Chicago 37, Ill. *1940*
Schumacher, Arnold C., 7645 Sheridan Rd., Chicago 26, Ill. *1941*
Schumann, John J., Jr., 1775 Broadway, New York 19, N.Y. *1942*
Schumpeter, Elizabeth B. (Mrs. Joseph A.), Taconic, Conn. *1927*
Schumpeter, Joseph A., 7 Acacia St., Cambridge, Mass. *1929*
Schwartz, Anita (Mrs. David), 145 W. Kingsbridge Rd., Bronx, New York 63, N.Y. *1945*
Schwartz, Bella, 2222 Eye St., N.W., Washington 7, D.C. *1946*
Schwartz, David, 145 W. Kingsbridge Rd., Bronx, New York 63, N.Y. *1941*
Schwartz, Robert J., 1905 B St., N.E., Washington 2, D.C. *1945*
Schwarz, John H., Cathedral Rectory, 607 N. Madison Ave., Peoria 3, Ill. *1945*
Schweiger, Irving, 419 Hamilton St., N.W., Washington 11, D.C. *1945*
Schweitzer, Arthur, Univ. of Wyoming, Liberal Arts Bldg., Laramie, Wyo. *1938*
Schwenger, Robert B., U. S. Dept. of Agric., Office of For. Agric. Rela., Washington, D.C. *1935*
Schwenning, Gustav T., 725 S. 21st St., Arlington, Va. *1924*
Scoles, Donald, Univ. of Southern California, Col. of Com., University Park, Los Angeles 7, Calif. *1945*
Scott, DR, Univ. of Missouri, Columbia, Mo. *1923*
Scott, Karl M., Marietta, Ohio. *1946*
Scott, Reginald H., Univ. of Pittsburgh, Pittsburgh, Pa. *1933*
Scott, Roland F., 821 W. 32nd St., Los Angeles 7, Calif. *1944*
Scovill, Hiram T., 217 Commerce Bldg., Urbana, Ill. *1914*
Scrimshaw, Stewart, 1714 N. 71st St., Wauwatosa 13, Wis. *1913*
Scoggs, William O., Louisiana State Univ., Law Bldg., Rm. 5, Baton Rouge, La. *1910*
Seal, Harvey C., Western Illinois State Teachers Col., Macomb, Ill. *1937*
Searles, Clair K., R. 11, Box 217, Toledo 7, Ohio. *1928*
Sedgwick, Robert C., 1054 Ackerman Ave., Syracuse, N.Y. *1936*
Seelye, Alfred L., Univ. of Kansas, School of Bus., Lawrence, Kans. *1942*
Segal, Melvin J., Michigan State Col., Basic Col., Dept. of Soc. Sci., East Lansing, Mich. *1934*
Segal, Robert M., 36 Acacia Ave., Chestnut Hill 67, Mass. *1946*
Segal, Sol A., 2515 14th St., N.E., Washington, D.C. *1941*
Seibert, Joseph C., Miami Univ., Oxford, Ohio. *1941*
Seidl, Julius C. G., 266 W. 23rd St., New York 11, N.Y. *1940*
Seidler, Gustav, Jr., 1927 S. Arlington Ridge Rd., Arlington, Va. *1935*
Seidman, Joel, 6030 Broad St., Brookmont, Md. *1939*
Selbert, Frida F. (Mrs.), 10525 Carnegie Ave., Cleveland, Ohio. *1937*
Selekman, Ben M., Harvard Univ., Grad. School of Bus. Admin., Boston 38, Mass. *1926*
Seligman, Ben B., 35 Crown St., Brooklyn, N.Y. *1941*
Selko, Daniel T., 722 Jackson Pl., Washington, D.C. *1929*
Seltzer, George, 5532 S. Kenwood Ave., Apt. 201, Chicago 37, Ill. *1941*
Seltzer, Lawrence H., Wayne Univ., 457 Putnam Ave., Detroit 1, Mich. *1921*
Senior, Clarence, Univ. of Puerto Rico, Soc. Sci. Res. Center, Rio Piedras, P.R. *1945*
Senturia, Joseph J., 5410 Macomb St., N.W., Washington 16, D.C. *1946*
Serey, Edward J., c/o M. Dyke, 12 Centre Ave., Lynbrook, N.Y. *1944*
Serrano, Enrique E., Calle 8, No. 456, Vista Alegre, Santiago de Cuba, Cuba. *1942*
Sessler, Matt J., 19 Mariners Pl., Plainfield, N.J. *1945*
Sethur, Frederick, 1560 Metropolitan Ave., Bronx, New York 62, N.Y. *1943*
Severson, Harry L., 12 West Dr., Larchmont, N.Y. *1946*
Seybold, John W., 216 Yale Ave., Swarthmore, Pa. *1941*
Seymour, Helen V., 1306 34th St., N.W., Washington 7, D.C. *1943*
Shafer, Joseph E., 522 N. Thomas, Arlington, Va. *1929*
Shaffner, Felix I., 14 Washington Pl., E., New York, N.Y. *1941*
Shahan, Ewing P., Vanderbilt Univ., Box 60, Calhoun Hall, Nashville 4, Tenn. *1941*

Shallcross, Ruth, Inst. of Paper Chemistry, Appleton, Wis. *1946*
Sham, Donald, 900 19th St., N.W., Washington, D.C. *1944*
Shames, Lee M., Bent Creek Exp. Forest, R. 3, Asheville, N.C. *1945*
Shapiro, Edward, 122 Rosalind Pl., Toledo 10, Ohio. *1944*
Shapiro, Jack, 3032 Rodman St., N.W., Washington 8, D.C. *1944*
Shapiro, Louis A., 1900 F St., N.W., Washington, D.C. *1946*
Shapiro, Solomon, 2714 30th St., S.E., Washington, D.C. *1939*
Sharfman, I(saiah) Leo, Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1914*
Sharfman, Norman, 41 Arctic St., Worcester, Mass. *1946*
Sharfman, Saul, 41 Arctic St., Worcester, Mass. *1946*
Sharp, Luther, Great Nat. Life Bldg., Dallas, Tex. *1941*
Sharron, Arthur O., 1430 Saratoga Ave., N.E., Washington 18, D.C. *1945*
Shattuck, Leroy A., Jr., 5537 Fifth Ave., Pittsburgh 6, Pa. *1942*
Shaulis, Lloyd L., General Aniline and Film Corp., 230 Park Ave., New York 17, N.Y. *1931*
Shaw, A. W., 135 S. La Salle St., Rm. 3714, Chicago 3, Ill. *1910*
Shaw, Albert, Winter Park, Fla. *1886*
Shaw, Alejandro E., Charcas 682, Buenos Aires, Argentina, South America. *1943*
Shaw, Edward S., Dept. of Econ., Stanford University, Calif. *1942*
Shaw, Ernest R., Gordon Hotel, 916 16th St., N.W., Washington, D.C. *1922*
Shaw, Fayette B., De Paul Univ., 64 E. Lake St., Rm. 1400, Chicago, Ill. *1940*
Shaw, Harry F. R., 204 Tuck Hall, Hanover, N.H. *1925*
Shaw, Kinn Wei, 3197 Porter St., N.W., Washington 8, D.C. *1942*
Shaw, W. Lawrence, 916 Madison St., Albany 6, Calif. *1945*
Shaw, William H., 918 Beverly Dr., Alexandria, Va. *1940*
Shea, J. Whitney, Houghton Col., Houghton, N.Y. *1938*
Shea, John L., Canisius Col. Lib., 2001 Main St., Buffalo 8, N.Y. *1940*
Shearer, Warren W., Wabash Col., Crawfordsville, Ind. *1940*
Sheehan, John H., 426 Marquette Ave., South Bend 17, Ind. *1939*
Shefveland, O. E., 415 E. College Ave., Waukesha, Wis. *1943*
Shelton, Henry W., Box 48, La Jolla, Calif. *1916*
Shelton, W(illiam) Arthur, 3211 Tennyson St., N.W., Washington, D.C. *1919*
Shelton, William C., 3527 Center St., N.W., Apt. 3, Washington 10, D.C. *1946*
Shenefield, Hale T., 3136 Newark St., N.W., Washington, D.C. *1941*
Shepard, E(arl) Fenton, 3448 S. Wakefield St., Arlington, Va. *1940*
Sheperdson, William, 414 E. 52nd St., New York 22, N.Y. *1942*
Shepherd, Geoffrey S., Iowa State Col., Dept. of Agric. Econ., Ames, Iowa. *1931*
Shepherd, Henry L., 93 Elm St., Hartford, Conn. *1935*
Sheppard, Ernest J., 535 Hayes St., West Lafayette, Ind. *1926*
Sheppard, Reginald C. S., 118-40 Metropolitan Ave., Apt. 3C, Kew Gardens, L.I., N.Y. *1945*
Shere, Louis, 3000 39th St., N.W., Washington 16, D.C. *1945*
Sherman, William R., Hillsdale Col., Hillsdale, Mich. *1923*
Sherr, Harry, 301 Livingston Ter., S.E., Washington 20, D.C. *1943*
Sherrard, Alfred, 2000 F St., N.W., Washington, D.C. *1942*
Sherrington, Charles E. R., Railway Res. Service, 4 Cowley St., Westminster, London, S.W. 1, England. *1923*
Shields, D(avid) Murray, Irving Trust Co., 1 Wall St., New York, N.Y. *1925*
Shields, Harald G., 222 N. Western Ave., Carpentersville, Ill. *1946*
Shields, Paul O., 1308 W. Jefferson, Kokomo, Ind. *1942*
Shields, Thomas K., 3021 E. Second St., Long Beach, Calif. *1940*
Shih, Constant Chung-Tse, Lancashire Col., Whalley Range, Manchester 16, England. *1946*
Shirley, Robert V., J-1 Prince Georges Apt., Hyattsville, Md. *1942*
Shirven, Maynard N., 229 S. 23rd St., La Crosse, Wis. *1941*
Shiskin, Julius, 4215 Russell Ave., Mt. Rainier, Md. *1937*
Shister, Joseph, Syracuse Univ., Dept. of Econ., Syracuse, N.Y. *1945*
Shlakman, Vera, 195 Hicks St., Brooklyn 2, N.Y. *1938*
Shore, Mary L., 1960 Georgia Ave., Winston-Salem, N.C. *1937*
Shortliffe, J. Melbourne, 35 Payne St., Hamilton, N.Y. *1925*
Shoup, Carl S., Columbia Univ., School of Bus., New York 27, N.Y. *1925*
Shugg, Roger W., Alfred A. Knopf, Inc., 501 Madison Ave., New York 22, N.Y. *1945*
Shuloff, Emil H., 1078 St. Johns Pl., Brooklyn, N.Y *1944*

Shultz, Birl E., Swift River, Mass. *1942*
Shultz, William J., 119 Lee Rd., Scarsdale, N.Y. *1940*
Shuman, Ronald B., 1671 College Ave., Palo Alto, Calif. *1929*
Shurberg, Merwin, 4326 Livingston Rd., S.E., Washington 20, D.C. *1943*
Shute, John, c/o George Shute, 51 Park Dr., Suite 32, Boston 15, Mass. *1943*
Shybekay, Derso, North Star Woolen Mill Co., Minneapolis 1, Minn. *1943*
Siefkin, Gordon, School of Bus. Admin., Emory University, Ga. *1946*
Siegel, Irving H., 5407 9th St., N.W., Washington 11, D.C. *1941*
Sielaff, Theodorè J., Macalester Col., St. Paul 5, Minn. *1945*
Sienkiewicz, Casimir A., 925 Chestnut St., Philadelphia, Pa. *1936*
Sievers, Allen M., Univ. of North Carolina, Woman's Col., Greensboro, N.C. *1945*
Sigsbee, Ray A., 145 Ames Ave., Leonia, N.J. *1936*
Sikes, Earl R., Dartmouth Col., Hanover, N.H. *1925*
Silberner, Edmund, 3025 15th St., N.W., Washington, D.C. *1944*
Silvanie, Haig, 3822 Davis Pl., N.W., Washington 7, D.C. *1943*
Silvanie, Sarah R. (Mrs. Haig), 3822 Davis Pl., N.W., Washington 7, D.C. *1943*
Silverstein, Nathan L., Indiana Univ., School of Bus. Admin., Bloomington, Ind. *1928*
Silverstrand, Clarence F., 1728 N. Troy, Arlington, Va. *1937*
Simmons, Carroll D., Univ. of Texas, Austin 21, Tex. *1927*
Simmons, Edward C., 238 S. Elmwood Ave., Oak Park, Ill. *1936*
Simon, S. Fanny, 1160 Cromwell Ave., New York, N.Y. *1935*
Simonds, Rollin H., 1321 Washington St., Evanston, Ill. *1941*
Simons, Algie M., 1141 E. 14th St., Brooklyn, N.Y. *1925*
Simons, May Wood (Mrs. A. M.), 1141 E. 14th St., Brooklyn, N.Y. *1941*
Simpson, Floyd R. O., Univ. of Washington, Col. of Econ. and Bus., Seattle 5, Wash. *1933*
Sims, Lewis B., Bur. of the Census, Government Div., Washington, D.C. *1938*
Sinclair, Sol, 426 Niagara St., Winnipeg, Man., Canada. *1944*
Singer, Isidore L., 1601 Dahill Rd., Brooklyn, N.Y. *1942*
Sinsabaugh, Robert W., 185 W. Passaic Ave., Rutherford, N.J. *1932*
Sjöberg, E(rik) Arne, Gustav III:s väg 37, Stockholm, Sweden. *1946*
Skaug, Arne, Norwegian Embassy, 3401 Massachusetts Ave., N.W., Washington 7, D.C. *1941*
Skeoch, Lawrence A., Univ. of Toronto, Dept. of Polit. Econ., 273 Bloor St., W., Toronto, Ont., Canada. *1944*
Skinner, Macy M., Univ. of Washington, 210 Commerce Hall, Seattle, Wash. *1921*
Slacum, Albert B., 120 High St., Cambridge, Md. *1945*
§**Slade,** Helen, 400 E. 57th St., New York, N.Y. *1923*
Slater, J. E., Coverdale and Colpitts, 120 Wall St., New York, N.Y. *1925*
Slichter, Sumner H., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston, Mass. *1920*
Slitor, Richard E., 2426 19th St., N.W., Washington 9, D.C. *1945*
Sloan, H. Grady, Univ. of Oklahoma, Col. of Bus. Admin., Norman, Okla. *1945*
Sloan, Virginia B., 2204 Hurley Ave., Fort Worth, Tex. *1940*
Small, Joseph T., Paine, Webber, Jackson and Curtis, 25 Broad St., New York 4, N.Y. *1936*
Smart, L(ouis) Edwin, 410 King Ave., Columbus 1, Ohio. *1923*
Smelser, David P., Procter and Gamble Co., Cincinnati, Ohio. *1925*
Smigel, Stanley E., c/o L. H. Kibler, Harper Rd., Solon, Ohio. *1944*
Smith, Alfred G., Jr., R.F.D. 4, Lexington, S.C. *1941*
Smith, Arthur A., 3412 Bryn Mawr, Dallas, Tex. *1939*
Smith, A(rthur) Howard, 235 Grand Ave., Rochester, N.Y. *1942*
Smith, Bradford B., 7 Heathcote Rd., Scarsdale, N.Y. *1924*
Smith, Carl L., 1951 Grafton Rd., Elyria, Ohio. *1942*
Smith, Charles W., 1810 Park Ave., Baltimore 27, Md. *1936*
Smith, Dan T., Morgan Hall, Soldiers Field, Boston 63, Mass. *1928*
Smith, Earl L., 32 Cavanaugh Rd., Wellesley, Mass. *1939*
Smith, Edmund A., 1118 Stanfield, South Bend 17, Ind. *1946*
Smith, Edward L., 676 Riverside Dr., New York, N.Y. *1925*
§**Smith,** Elliott D., 90 High St., New Haven, Conn. *1938*
Smith, Elmer A., 135 E. 11th Pl., Chicago, Ill. *1937*
Smith, Elmer L., 3071 Seymour Ave., Cleveland 13, Ohio. *1944*
Smith, Everett G., Univ. of Texas, W. H. 213, Austin 12, Tex. *1933*
Smith, George A., Jr., Harvard Univ., Grad.

School of Bus. Admin., Soldiers Field, Boston, Mass. *1941*

Smith, Harlan M., C.P.S. Camp 46, Big Flats, N.Y. *1942*

Smith, Harry W., Univ. of New Hampshire, Dept. of Econ., Durham, N.H. *1924*

Smith, Hartley L., 138 Cassidy Pl., New Brighton, S.I., N.Y. *1921*

Smith, Helen H., 156-08 Riverside Dr., W., Apt. 5F, New York 32, N.Y. *1936*

Smith, J. Bond, Jr., 7059 Eastern Ave., Takoma Park, Washington 12, D.C. *1944*

***Smith,** Jacob G., 602 Crossett St., Syracuse, N.Y. *1903*

Smith, James G., 80 Murray Pl., Princeton, N.J. *1922*

Smith, John J., 1112 N. 31st St., Birmingham, Ala. *1939*

Smith, Joseph E., Youngstown Col., Youngstown, Ohio. *1927*

Smith, Lawrence, 88 Leighton Rd., Wellesley, Mass. *1923*

Smith, Lucius, 511 John St., N.W., Atlanta, Ga. *1934*

Smith, Nelson L., 2480 16th St., N.W., Washington 9, D.C. *1924*

Smith, Newlin R., 805 7th St., N.E., Washington 2, D.C. *1934*

Smith, Paul F., c/o W. R. Peacock, 6801 Clyde Ave., Chicago 49, Ill. *1944*

Smith, Philip M., Union Col., Barbourville, Ky. *1942*

Smith, Mrs. Philip M., Union Col., Barbourville, Ky. *1945*

Smith, Pierre R., Elyria Savings Bldg., Elyria, Ohio. *1930*

Smith, R(alph) Elberton, Univ. of Chicago, Judson Court, Rm. 830, Chicago 37, Ill. *1939*

Smith, Robert S., 681 Col. Sta., Durham, N.C. *1935*

Smith, Roy J., Univ. of California, Div. of Agric. Econ., Los Angeles 24, Calif. *1939*

Smith, S. Granville, 428 St. James Pl., Chicago 14, Ill. *1946*

Smith, Theodore H., Montana State Univ., School. of Bus. Admin., Missoula, Mont. *1944*

Smith, Tynan, Box 199, R.F.D. 1, Alexandria, Va. *1943*

Smith, Victor E., 34 Eliot St., South Natick, Mass. *1937*

Smith, Victor R., Confederation Life Asso., 12 Richmond St., E., Toronto, Ont., Canada. *1943*

Smith, Walter B., 128 Main St., Williamstown, Mass. *1925*

Smith, Wendell R., 920 Highwood Dr., Iowa City, Ia. *1940*

Smithies, Arthur, Bur. of the Budget, Washington, D.C. *1945*

Smolinski, Harold J., 417 McIntyre St., Minden, La. *1940*

Smul, Kathryn (Mrs. Philip Arnow), 412 Linden Lane, Falls Church, Va. *1943*

Smythe, Limen T., South Dakota State Col., Agric. Econ. Dept., Brookings, S.D. *1940*

Smythe, Mabel M. (Mrs.), Tennessee A. and I. Col., Nashville, Tenn. *1941*

Snavely, Tipton R., Monroe Hill, University, Va. *1918*

Snell, Hampton K., 2215 42nd St., N.W., Washington 7, D.C. *1940*

Snider, Joseph L., Harvard Univ., Grad. School of Bus. Admin., Soldiers Field, Boston 63, Mass. *1918*

Snyder, Barth J., 304 Old Lane, Dayton, Ohio. *1942*

Snyder, Ivan V., 3964 Broadway, Indianapolis, Ind. *1937*

Snyder, Richard M., Thornton, Pa. *1941*

Sobin, Bernard, c/o Glekas, 1729 Upshur St., N.W., Washington, D.C. *1944*

Sogge, Tillman M., 2810 24th St., N., Arlington, Va. *1937*

Solá, Jorge L., Argentine Embassy, Washington, D.C. *1944*

Sollenberger, Issac J., Univ. of Oklahoma, Faculty Exchange, Norman, Okla. *1926*

Solomon, Morris J., 1141 President St., Brooklyn 25, N.Y. *1946*

Soltar, Elsie B., 1329 Fort Stevens Dr., N.W., Washington, D.C. *1942*

Solterer, Josef, East Falls Church, Va. *1932*

Somers, Harold M., Univ. of Buffalo, Buffalo, N.Y. *1941*

Somers, Herman M., 1717 19th St., N.W., Washington, D.C. *1940*

Somers, Richard H., R.F.D. 1, Dover, N.H. *1931*

Sommaripa, George G., Harvard Club, 27 W. 44th St., New York, N.Y. *1930*

Soong, Eugen You-chi, 1 Wall St., Rm. 1400, New York 5, N.Y. *1945*

Sorkin, Cylvia A. (Mrs.), 520 Sappington Rd., R. 6, Sappington 23, Mo. *1941*

Sorrell, Vernon G., 229 N. Dartmouth, Albuquerque, N.M. *1926*

Sotto, Enrique L., "La Metropolitana," Dep. 336, Havana, Cuba. *1945*

Soudek, Josef, 900 West End Ave., New York, N.Y. *1939*

Soule, George, 3 E. 69th St., New York, N.Y. *1942*

Southard, Frank A., Jr., Cornell Univ., Dept. of Econ., Ithaca, N.Y. *1927*

Southworth, Constant, 4000 Cathedral Ave., Washington, D.C. *1938*

Southworth, Herman M., 637 21st St., S., Arlington, Va. *1942*

Southworth, Shirley D., 701 Powell St., Williamsburg, Va. *1921*
Spafford, William F., Conway Ct., Troy, N.Y. *1925*
Spahr, Walter E., 8 Michigan Rd., Bellerose, L.I., N.Y. *1920*
Spang, Kenneth M., 500 Riverside Dr., New York 27, N.Y. *1937*
Spannon, A. George N., American Nat. Bank Bldg., Suite 1432, 33 N. La Salle St., Chicago 2, Ill. *1944*
Sparks, Frank H., Crawfordsville, Ind. *1936*
Spaulding, Charles B., Whittier Col., Whittier, Calif. *1941*
Spaulding, Mayne, Ralson, Iowa. *1946*
Spencer, Francis A., 2215 Payne St., Evanston, Ill. *1939*
Spencer, Myron J., 812 E. Mitchell, Cincinnati 29, Ohio. *1940*
Spencer, Richard C., 1875 Mintwood Pl., N.W., Washington 9, D.C. *1942*
Spencer, William H., War Manpower Com., Chicago 6, Ill. *1943*
Spengler, Edwin H., 114-28 177th St., St. Albans, L.I., N.Y. *1928*
Spengler, Joseph J., Duke Univ., Durham, N.C., *1928*
Sperling, Celia, 1749 Lanier Pl., N.W., Washington, D.C. *1943*
Spero, Nathan, 165 Pinehurst Ave., New York 33, N.Y. *1944*
Spiegel, David K., 390 Riverside Dr., New York, N.Y. *1940*
Spiegel, Harold R., 8412 Piney Branch Ct., Silver Spring, Md. *1942*
Spiegel, Henry W., Duquesne Univ., 331 Fourth Ave., Pittsburgh, Pa. *1938*
Spielmans, John V., 5714 Blackstone Ave., Chicago 37, Ill. *1936*
‡**Spiethoff,** Arthur A. C., Adelhauserstrasse 27, Badenweiler, Baden, Germany. *1932*
Spingarn, Edward D. W., "Troutbeck," Amenia, N.Y. *1941*
Spitzer, Emil G., 383 Harvard St., Cambridge, Mass. *1944*
Splawn, Walter M. W., Interstate Com. Com., Washington, D.C. *1944*
Sprague, Oliver M. W., 13 Follen St., Cambridge, Mass. *1900*
Spriegel, William R., Northwestern Univ., School of Com., Evanston, Ill. *1937*
Spurr, William A., Univ. of Chicago, School of Bus., Chicago 37, Ill. *1938*
Spurrier, Leo, 422 N. Amelia Ave., De Land, Fla. *1925*
Staats, Elmer B., Executive Office of the President, Bur. of the Budget, Washington, D.C. *1945*
Staebler, Neil, 424 S. Main St., Ann Arbor, Mich. *1933*
§**Staley,** A. Eugene, Inst. of Pacific Relations, 417 Market St., San Francisco 5, Calif. *1928*
Stalson, J. Owen, 340 E. 52nd St., New York, N.Y. *1935*
Stanfield, Boris M., Columbia Univ., New York 27, N.Y. *1934*
Stang, Sister M. Blandina, Aquinas Col., Grand Rapids, Mich. *1943*
Stapp, Peyton, 8449 Woodcliff Ct., Silver Spring, Md. *1936*
Stark, Walter R., Loomis, Sayles and Co., 140 Federal St., Boston 10, Mass. *1920*
Starkweather, Louis P., 935 Oakwood Pl., Plainfield, N.J. *1934*
Starnes, George T., Box 1301, Univ. Sta., Charlottesville, Va. *1924*
Staudinger, Hans W., Inst. of World Affairs, 66 Fifth A e., New York 11, N.Y. *1936*
Stauss, James H., Univ. of Tennessee, School of Bus. Admin., Knoxville, Tenn. *1941*
Stead, William H., Vanderbilt Univ., Nashville, Tenn. *1941*
Stecker, Margaret L., 1703 New York Ave., N.W., Washington, D.C. *1917*
Steele, H. Ellsworth, 3025 W. Bancroft, Toledo 6, Ohio. *1946*
Stehman, J. Harold, 2012 N. Monroe St., Arlington, Va. *1944*
Stehman, J(onas) Warren, Univ. of Minnesota, Minneapolis, Minn. *1916*
Stein, Emanuel, New York Univ., Washington Square Col., New York 3, N.Y. *1931*
Stein, Harold, 4574 Kings Highway, Brooklyn 3, N.Y. *1929*
Stein, Herbert, 7005 Aspen Ave., Takoma Park 12, Md. *1946*
Steiner, George A., 3900 Greystone Ave., Apt. 15F, Riverdale 63, N.Y. *1939*
Steiner, William H., 325 Riverside Dr., Apt. 121, New York, N.Y. *1916*
Stempf, Victor H., 38 Vine Rd., Larchmont, N.Y. *1942*
Stephan, Frederick F., 4924 Little Falls Rd., Arlington, Va. *1935*
Stephenson, Charles A., White Transportation Co., 15 Church St., Asheville, N.C. *1942*
Stern, Alfred W., Drake Tower, 179 Lake Shore Dr., Chicago, Ill. *1920*
Stern, Betty E., 2100 19th St., N.W., Apt. 306, Washington, D.C. *1944*
Stern, Boris, 5512 30th St., N.W., Washington 15, D.C. *1929*
Stettner, Walter F., Fed. Res. Bd., Washington, D.C. *1942*
Stevens, George D., 917 E. Wellington St., Flint 3, Mich. *1941*

Stevens, Milton S., 708 Waesche Ave., Brooklyn 29, N.Y. *1946*
Stevens, W(ayne) Mackenzie, 70 Pine St., Suite 4400, New York 5, N.Y. *1926*
Stevens, William H. S., 1940 Biltmore St., Washington, D.C. *1942*
Stevenson, Alexander, 10009 Dallas Ave., Silver Spring, Md. *1945*
Stevenson, John A., Penn Mutual Life Insurance Co., 530 Walnut St., Philadelphia, Pa. *1941*
Stevenson, Louis T., 122 E. 42nd St., 38th Fl., New York 17, N.Y. *1935*
Stevenson, Robert C., Univ. of Idaho, Southern Br., Pocatello, Idaho. *1934*
Stevenson, Russell A., Univ. of Michigan, School of Bus. Admin., Ann Arbor, Mich. *1927*
Stewart, Andrew, 67 Broad St., New York 4, N.Y. *1946*
Stewart, Bryce M., 75 Mercer Ave., Hartsdale, N.Y. *1921*
Stewart, Charles D., 4142 Southern Ave., S.E., Washington 20, D.C. *1944*
Stewart, John L., 722 S. Royal St., Alexandria, Va. *1925*
Stewart, Paul W., Stewart, Brown and Associates, 30 Rockefeller Plaza, New York, N.Y. *1931*
Stewart, Walter W., Gladstone, N.J. *1941*
Stewart, W(illiam) Blair, 3130 S.E. Bybee Blvd., Portland, Ore. *1930*
Stiefel, Carl F., 150 Scotland Rd., South Orange, N.J. *1917*
Stigler, George J., Brown Univ., Dept. of Econ., Providence, R.I. *1940*
Stiles, Lynn A., 105 W. Madison St., Rm. 1803, Chicago 2, Ill. *1937*
Stimson, Claude W., Pablo, Mont. *1929*
Stine, O. C., U. S. Dept. of Agric., Bur. of Agric. Econ., Washington 25, D.C. *1945*
Stinebower, Leroy D., Dept. of State, Washington, D.C. *1933*
Stinneford, Claude L., 408 College Ave., Richmond, Ind. *1928*
Stitt, Louise, Wardman Park Hotel, Washington, 8, D.C. *1925*
Stockder, Archibald H., Columbia Univ., School of Bus., New York 27, N.Y. *1925*
Stocker, Norman R., 19735 Sussex Ave., Detroit 19, Mich. *1943*
Stocking, Collis A., 3225 N. Glebe Rd., Arlington, Va. *1927*
Stocking, George W., Univ. of Texas, Austin, Tex. *1923*
Stockton, Frank T., Univ. of Kansas, Lawrence, Kans. *1910*
Stockton, John R., Univ. of Texas, Col. of Bus. Admin., Austin 12, Tex. *1940*
Stockwell, Marvel M., 405 Hilgard Ave., Los Angeles, Calif. *1922*
Stockwell, Richard E., Gen. Del., Neillsville, Wis. *1945*
Stoflet, Ada M., c/o Mrs. Wesley Cook, Cheyney, Pa. *1941*
Stokes, Milton L., Imperial Theatre Bldg., Suite 1, Sarnia, Ont., Canada. *1934*
§**Stolper,** Gustav, 52 Wall St., New York, N.Y. *1940*
Stolper, Wolfgang F., Swarthmore Col., Swarthmore, Pa. *1940*
Stone, Edward A. (Lt.), Procurement Div., Jeffersonville Q. M. Depot, Jeffersonville, Ind. *1941*
Stone, J. L., Arkansas A. and M. Col., Dept. of Econ. and Soc., Monticello, Ark. *1945*
Stone, Nahum I., 414 W. 118th St., New York, N.Y. *1899*
Stone, Raleigh W., Univ. of Chicago, Chicago 37, Ill. *1920*
Stone, Robert E., 1600 S. Barton, Apt. 754, Arlington, Va. *1943*
Strange, Robert H., Scudder, Stevens and Clark, 10 Post Office Sq., Boston, Mass. *1942*
Stratton, Samuel S., Middlebury Col., President's Office, Middlebury, Vt. *1928*
Straus, Everet M., 1700 Taylor St., N.W., Washington, D.C. *1945*
Strauss, William, Paris, Corner Race and Opera Pl., Cincinnati, Ohio. *1943*
Strayer, Paul J., Princeton Univ., Dept. of Econ., Princeton, N.J. *1935*
Streeter, Thomas W., Sussex Ave., Morristown, N.J. *1912*
Stricker, Adam K., Jr., 1227 Bishop Rd., Grosse Point Park, Mich. *1938*
Strickland, Irma S. (Mrs. Maurice A.), 685 Penn Ave., N.E., Atlanta, Ga. *1944*
Strickland, Maurice A., 685 Penn Ave., N.E., Atlanta, Ga. *1939*
Strickler, Glen W., Univ. of Arizona, Dept. of Econ., Tucson, Ariz. *1941*
Strong, Earl D., 913 Seventh Ave., Grinnell, Iowa. *1922*
Strotz, Robert H., 6051 Kimbark Ave., Chicago 37, Ill. *1943*
Struve, Louis W., 109 W. Jenkintown Rd., Weldon, Glenside P. O., Pa. *1938*
Stucki, Roland, Univ. of Utah, Salt Lake City, Utah. *1946*
Studenski, Paul, 290 6th Ave., New York 14, N.Y. *1930*
Studley, Jeanette, Consumers' League of Conn., 36 Pearl St., Hartford, Conn. *1942*
Studybaker, Aaron D., 1501 15th St., Sacramento 14, Calif. *1944*
Sturc, Ernest, c/o Czech. Information Service, 1790 Broadway, New York, N.Y. *1944*
Sturmthal, Adolf F., Bard Col., Columbia Univ., Annandale on Hudson, N.Y. *1941*

Subercaseaux, Guillermo, Calle Merced 152, Santiago, Chile, South America. *1913*
Sublette, Myrick H., Mary Washington Col., Fredericksburg, Va. *1930*
Suffern, Arthur E., 2015 Allen Pl., N W., Washington, D.C. *1930*
Sufrin, Sidney C., c/o A. U. Sufrin, 1822 Harvard St., N.W., Washington, D.C. *1935*
Suiter, William O., 408 Stacy St., Raleigh, N.C. *1940*
Sulkin, Lorraine L. (Mrs. S. E.), 4508 San Carlos Dr., Dallas, Tex. *1939*
Sullivan, Rodman, Univ. of Kentucky, Col. of Com., Lexington, Ky. *1930*
Sumberg, Theodore A., 602 W. 190th St., New York 33, N.Y. *1942*
Summer, Winifred E., 3750 Lake Shore Dr., Apt. 5E, Chicago 13, Ill. *1944*
Sumner, John D., 6676 32nd Pl., N.W., Washington, D.C. *1928*
Sundelson, J. Wilner, 2720 Wisconsin Ave., N.W., Washington, D.C. *1946*
Sundelson, Janet R. (Mrs. J. Wilner), 2720 Wisconsin Ave., N.W., Washington, D.C. *1944*
Sur, Fadil H., Ankara Universitesi, Hukuk Fakültesi, Ankara, Turkey. *1945*
Surânyi-Unger, Theo, Syracuse Univ., Dept. of Econ., Syracuse, N.Y. *1946*
Surface, Frank M., 1 W. 72nd St., New York, N.Y. *1923*
Surveyer, Arthur, Dominion Square Bldg., Montreal, Que., Canada. *1936*
Sutcliffe, William G., 685 Commonwealth Ave., Boston, Mass. *1941*
Sutton, Glenn W., Univ. of Georgia, Veterans' Div., Athens, Ga. *1945*
Swan, Eliot J., Fed. Res. Bank, Div. of Res., 400 Sansome, San Francisco 20, Calif. *1941*
Swanish, Peter T., 6527 Glenwood Ave., Chicago, Ill. *1933*
Swanson, Arthur E., 2310 Central Park Ave., Evanston, Ill. *1915*
Swanson, Ernst W., U. S. Chamber of Commerce, Washington, D.C. *1940*
Swantz, Alexander, 3249 35th Ave., W., Seattle 99, Wash. *1944*
Swarthout, Arthur V., Nat. Oil Products Co., Harrison, N.J. *1941*
Sweet, Homer N., 80 Federal St., Boston, Mass. *1919*
Sweezy, Paul M., Carolfield, Wilton Centre, N.H. *1946*
Swiatopolk-Mirski, Michael, Columbia Univ., 612 Hamilton Hall, New York 27 N.Y. *1945*
Swift, Harold H., Union Stock Yards, Chicago, Ill. *1924*
Swift, Pauline E., 12 Walnut Pk., Roxbury 19, Mass. *1941*
Symons, James H., 195 Nassau Blvd., Garden City, N.Y. *1941*
Szatrowski, Zenon, Northwestern Univ., Harris Hall, Evanston, Ill. *1943*

Taeuber, Conrad, American Sociological Soc., U. S. Dept. of Agric., Washington, D.C. *1942*
Taeusch, Carl F., Office of Military Gov. (U.S.), Econ. Div., Food and Agric. Br. (Berlin, Germany), A.P.O. 742, c/o Postmaster, New York, N.Y. *1929*
Taft, Philip, 174 Irving Ave., Providence, R.I. *1937*
Taggart, Joseph H., University Club, Washington, D.C. *1930*
Tagliacozzo, Giorgio, 600 W. 113th St., New York, N.Y. *1942*
Takahashi, Shigeharu (T/Sgt.), 46020831, 74th MG Hq. and Hq. Co., A.P.O. 928, c/o Postmaster, San Francisco, Calif. *1943*
Talbot, Homer, 1230 Hudson St., Denver 7, Colo. *1943*
Tamagna, Frank M., Fed. Res. Bank of New York, 33 Liberty St., Foreign Res. Div., New York, N.Y. *1940*
Tamby, Frank J., 1541 Metropolitan Ave., New York, N.Y. *1934*
Tandy, W. Lou, Lake Erie Col., Painesville, Ohio. *1932*
Tanenbaum, Jerome, 525 Broadway, New York, N.Y. *1917*
Tannenbaum, Frank, Columbia Univ., Dept. of Hist., New York, N.Y. *1925*
Tannenbaum, Robert, Univ. of Chicago, School of Bus., Chicago 37, Ill. *1946*
Tarasov, Helen (Mrs. H. L. Reed), 51 Houston St. Asheville, N.C. *1943*
Tator, Samuel W., Junior Col. of Com., 389 Whitney Ave., New Haven, Conn. *1918*
Taus, Esther R. (Mrs.), 1535 Undercliff Ave., Apt. 401, Bronx, New York 53, N.Y. *1938*
Taylor, Albion G., Col. of William and Mary, Williamsburg, Va. *1928*
Taylor, Alonzo E., 200 Chamber of Commerce, Minneapolis 15, Minn. *1942*
Taylor, Amos E., Bur. of For. and Dom. Com., Int. Econ. Unit, Washington, D.C. *1917*
Taylor, A(rchibald) Wellington, 143 Stanmore Pl., Westfield, N.J. *1916*
Taylor, Charles T., 494-G Pinecrest Circle, Marietta, Ga. *1941*
Taylor, Clayton V., U. S. Civil Service Com., 8th and F Sts., N.W., Washington, D.C. *1942*
Taylor, Edward F., 114-28 179th St., St. Albans, L.I., N.Y. *1924*
Taylor, George R., Utter Rd., R.F.D. 2, Amherst, Mass. *1922*
Taylor, George W., Fairfax Apts., 43rd and Locust Sts., Philadelphia 4, Pa. *1934*

Taylor, Henry C., Farm Found., 600 S. Michigan Ave., Chicago, Ill. *1903*
Taylor, Horace, Columbia Univ., Hamilton Hall, New York, N.Y. *1924*
Taylor, James S., Retraining and Re-employment Admin., Washington 25, D.C. *1945*
Taylor, Paul S., 119 South Hall, Berkeley, Calif. *1921*
Taylor, Philip E., 32 Marvel Rd., New Haven, Conn. *1934*
Taylor, Virdon W., 7012 Melrose Ave., University City 5, Mo. *1942*
Taylor, Wayne C., 1743 22nd St., N.W., Washington, D.C. *1943*
Taylor, W(illiam) Bayard, Univ. of Wisconsin, School of Com., Madison, Wis. *1923*
Taylor, William H., P. O. Box 946, Huntington, W.Va. *1935*
Tead, Ordway, Harper and Bros., 49 E. 33rd St., New York, N.Y. *1922*
Teaf, Howard M., Jr., 3 College Lane, Haverford, Pa. *1935*
Tebbutt, Arthur R., Northwestern Univ., School of Com., Evanston, Ill. *1939*
Temby, J. L., 321 N. Level St., Dodgeville, Wis. *1925*
Temple, Alan H., 69 Walworth Ave., Scarsdale, N.Y. *1939*
Tenenbaum, Henry, 6131 Utah Ave., N.W., Washington 15, D.C. *1945*
Tener, Kinley J., Sewickley, Pa. *1921*
Tennant, Richard B., 220 Park St., New Haven, Conn. *1941*
Teper, Lazare, Int. Ladies' Garment Workers' Union, 1710 Broadway, New York 19, N.Y. *1938*
Tepper, Lester, 1346 Park Rd., N.W., Apt. 208, Washington, D.C. *1945*
Terborgh, George W., 4542 N. 26th St., Arlington, Va. *1928*
Tereshtenko, Valery J., c/o K. V. Pestrecov, 59 Ringle St., Rochester 11, N.Y. *1934*
Terpenning, Walter A., 314 Michigan Ave., Albion, Mich. *1941*
Terrill, Robert P., 1746 N. Rhodes St., Arlington, Va. *1946*
Tesoro, George A., American Univ., 1901 F St., N.W., Washington, D.C. *1942*
Thalheimer, Rosalie A., 25 Morris St., Hamden 14, Conn. *1945*
Thatcher, Lionel W., 114 Kingsley Ave., Bethesda, Md. *1943*
Thayer, Ralph I., Univ. of Washington, Col. of Econ. and Bus., Seattle 5, Wash. *1941*
Thelen, Max, 136 Alvarado Rd., Berkeley, Calif. *1935*
Theodore, Demetrios E., 3611 S. Four Mile Run Dr., Arlington, Va. *1946*
Theodorides, Angelos, 2819A S. Abington St., Fairlington, Va. *1940*
Thielecke, Walter L., 1628 Telephone Bldg., St. Louis, Mo. *1943*
Thom, William R., 325 House Office Bldg., Washington, D.C. *1943*
Thomas, George, 1317 E. on S. Temple St., Salt Lake City 2, Utah, *1917*
Thomas, Herman P., University of Richmond, Va. *1940*
Thomas, Raymond D., Oklahoma A. and M. Col., School of Com., Stillwater, Okla. *1921*
Thomas, Rollin G., 610 Dodge St., La Fayette, Ind. *1928*
Thomas, Roscoe L., P. O. Box 612, Butte, Mont. *1917*
Thomas, Woodlief, 26 E. Bradley Lane, Chevy Chase 15, Md. *1924*
Thompson, Carey C., Amarillo Col., Amarillo, Tex. *1946*
Thompson, Charles M., 709 W. University Ave., Champaign, Ill. *1913*
Thompson, Donald S., Hillside, W. 254th and Independence Ave., New York 63, N.Y. *1942*
Thompson, Donna F., Rockford Col., Rockford, Ill. *1946*
Thompson, John G., 1319 E. Capitol St., Washington 3, D.C. *1908*
Thompson, Samuel H., 3535 R St., N.W., Washington, D.C. *1941*
Thompson, Samuel H., Iowa State Col., Ames, Iowa. *1923*
Thompson, William H., 1257 Orchard Dr., Ames, Iowa. *1946*
Thomson, Dorothy L. (Mrs.), 126 Weyman Ave., New Rochelle, N.Y. *1927*
Thorne, Alison C. (Mrs. D. W.), c/o D. W. Thorne, Utah State Col., Agronomy Dept., Logan, Utah. *1937*
Thorp, Willard L., 21 West St., New York 6, N.Y. *1920*
Thorson, Ivan A., 724 S. Spring St., Los Angeles, Calif. *1943*
Thresher, Brainerd A., M.I.T., Cambridge, Mass. *1929*
Thresher, Maurice B., British Embassy, Washington 8, D.C. *1945*
Tibbits, George D., University Club, 16th St., N.W., Washington, D.C. *1938*
Tillotson, Loyal G., Bradley Poly. Inst., Peoria, Ill. *1927*
Tilton, Earle Barton, Vilter Mfg. Co., 2217 S. First St., Milwaukee 7, Wis. *1940*
Timberg, Sigmund, 2215 42nd St., N.W., Washington 7, D.C. *1943*
Timlin, Mabel F., 500 Riverside Dr., New York 27, N.Y. *1946*
Timmerman, W. A., Tugelaweg 6, Emmarentia, Johannesburg, South Africa. *1946*

Timoshenko, Vladimir P., Food Res. Inst., Stanford University, Calif. *1934*
Tippetts, Charles S., Mercersburg Academy, Mercersburg, Pa. *1920*
Titus, Paul M., Kenyon Col., Gambier, Ohio. *1928*
Tjerandsen, Carl, Inst. of Citizenship, Kansas State Col., Manhattan, Kans. *1946*
Tobin, James, Harvard Univ., Dunster F-22, Cambridge 38, Mass. *1946*
Tolles, N(ewman) Arnold, Teaching Inst. of Economics, American Univ., 1901 F St., N.W., Washington 6, D.C. *1938*
Tolley, Howard R., Dept. of Agric., Bur. of Agric. Econ., Washington 25, D.C. *1924*
Tomasevich, Jozo, 4301 28th Pl., Mt. Rainier, Md. *1944*
Tomlin, George W., 3815 McGregor Dr., Columbia, S.C. *1942*
Tongue, William W., 430 Elmore Ave., Park Ridge, Ill. *1941*
Toohey, Paul G., Middle Haddam, Conn. *1941*
Topkis, Bernard H., 1316 New Hampshire Ave., N.W., Washington, D.C. *1939*
Torgerson, Harold W., Northwestern Univ., School of Com., Evanston, Ill. *1934*
Torres, José G., 35-16 76th St., Jackson Heights, N.Y. *1944*
Torrey, Edward P. (Pvt.), 42170562, Fiscal Office, Camp Blanding, Fla. *1945*
Tosdal, Harry R., 330 Morgan Hall, Soldiers Field, Boston, Mass. *1914*
Tostlebe, Alvin S., 839 Forest Dr., Wooster, Ohio. *1946*
Tough, Rosalind, Hunter Col., 695 Park Ave., New York, N.Y. *1938*
Tousley, Rayburn D., State Col. of Washington, School of Bus. Admin., Pullman, Wash. *1938*
Tow, Clarence W., Fed. Res. Bank, Kansas City 18, Mo. *1936*
Tower, Ralph B., West Virginia Univ., Dept. of Econ. and Bus. Admin., Morgantown, W.Va. *1925*
Towle, Lawrence W., 132 Newbury St., Hartford, Conn. *1932*
Towles, John K., Chase Nat. Bank, Pine St. corner of Nassau, New York, N.Y. *1910*
Towne, Ezra T., Univ. of North Dakota, Grand Forks, N.D. *1905*
Towner, Rutherford H., 60 John St., New York, N.Y. *1904*
Towsend, Julius J., 2900 Boarman Ave., Baltimore, Md. *1946*
Towsley, Frank H., 70 Pine St., New York, N.Y. *1943*
Trafton, George H., 76 N. Main St., Leominster, Mass. *1926*
Trant, James B., University, La. *1923*
***Traylor,** Orba F., 12 Montrose Pk., Frankfort, Ky. *1944*
Traywick, Leland E. (Lt.), Hq. ASFTC, Aberdeen Proving Ground, Md. *1941*
Tredwell, Thomas A., 16 Crows Nest Rd., Bronxville, N.Y. *1942*
Trefftzs, Kenneth L., Univ. of Southern California, Col. of Com., Los Angeles, Calif. *1939*
Trenchard, George O., Firestone Tire and Rubber Co., Akron 17, Ohio. *1945*
Treuenfels, Rudolf L., Butterick Co., 161 Sixth Ave., New York 13, N.Y. *1939*
Triffin, Robert, Bd. of Governors of Fed. Res. System, Washington, D.C. *1942*
Tripp, Chester D., 310 S. Michigan Ave., Rm. 1616, Chicago, Ill. *1943*
Tripp, L(ouis) Reed, 345 Vassar Ave., Swarthmore, Pa. *1935*
Trop-Krynski, Samson, 1500 Jesup Ave., New York, N.Y. *1942*
Troxel, C(harles) Emery, Wayne Univ., Dept. of Econ., Detroit, Mich. *1936*
Troxell, John P., 1224 Northview Rd., Baltimore, Md. *1929*
Truesdell, Leon E., 3429 Ordway St., N.W., Washington, D.C. *1920*
Truitt, Gray, 815 Front St., Hempstead, L.I., N.Y. *1939*
Trumbower, Henry R., Univ. of Wisconsin, Madison 6, Wis. *1905*
Trumbull, Wendell P., Box 202, Oxford, Miss. *1942*
Trump, Ross M., Tulane Univ., Col. of Com., New Orleans, La. *1940*
Tucker, Donald S., M.I.T., Cambridge, Mass. *1912*
Tucker, Morrison G., University Club, 1135 16th St., N.W., Washington, D.C. *1941*
Tucker, Robert H., Washington and Lee Univ., Lexington, Va. *1912*
Tucker, Rufus S., 436 Hillside Ave., Westfield, N.J. *1912*
Tuckerman, Gustavus, Jr., Inst. on Postwar Reconstruction, New York Univ., Washington Sq., New York 3, N.Y. *1945*
Tugman, James L., 2399 Edgerton Rd., University Heights, Cleveland 18, Ohio. *1945*
Tugman, Mrs. James L., 2399 Edgerton Rd., University Heights, Cleveland 18, Ohio. *1946*
Tugwell, Rexford G., La Fortaleza, San Juan, P.R. *1921*
Tully, Andrew M., 445 Riverside Dr., New York 27, N.Y. *1942*
Turnbull, John G., 4442 N. Oakland Ave., Milwaukee, Wis. *1943*
Turner, Arthur P. L., Jr., 147 Jane St., Englewood, N.J. *1934*

Turner, Clarence L., 1530 Chestnut St., Philadelphia, Pa. *1942*

Turner, John R., 3358 N. Mt. View Dr., San Diego, Calif. *1941*

Turner, Robert C., 9803 Merrwood Lane, Silver Spring, Md. *1935*

Turney, M(erle) Clark, 919 N. Cross St., Wheaton, Ill. *1935*

Tuthill, John W., Dept. of State, Foreign Service Mail Desk, F.A., Washington 25, D.C. *1938*

Tuttle, Alva M., 5155 Cleveland Ave., Westerville, Ohio. *1944*

Tuttle, Frank W., 605 McKoy St., Decatur, Ga. *1922*

Tuttle, Pierson M., Short Hills, N.J. *1915*

Tyler, Cornelius B., 165 Broadway, New York, N.Y. *1913*

Tyson, Deborah (Mrs. Leonard S.), 3028 Wisconsin Ave., N.W., Washington 16, D.C. *1944*

Tyson, Francis, Univ. of Pittsburgh, Pittsburgh, Pa. *1918*

Tyson, Leonard S., 3028 Wisconsin Ave., N.W., Washington 16, D.C. *1942*

Ueland, Alexander, 3900 Connecticut Ave., N.W., Washington, D.C. *1937*

Uhalt, Alfred H., P. O. Box 1021, Jackson, Miss. *1943*

Uhr, Carl G., 3300 Clay St., San Francisco 18, Calif. *1944*

Ule, G. Maxwell, 5610 Ingleside Ave., Chicago, Ill. *1940*

Ullian, Frieda S., 35 Dolphin Rd., Newton, Mass. *1938*

Ullman, Adolph, 588 Commonwealth Ave., Boston, Mass. *1938*

Ulmer, Carl D., 945 Koppers Bldg., Pittsburgh, Pa. *1926*

Ulmer, Melville J., 4116 N. Henderson Rd., Arlington, Va. *1940*

Ulrey, Ivon W., 9148 N. State Rd., Westerville, Ohio. *1941*

Umbreit, Myron H., 2111 Ridge Ave., Evanston, Ill. *1928*

Umstott, Haven D., 221 Vine St., Westernport, Md. *1942*

Underhill, Hurshel E., 528 Pierce St., Kansas City, Mo. *1944*

Unstad, Lyder K. L., Alma Col., Alma, Mich. *1934*

Unterberger, S. Herbert, 3923 R St., S.E., Washington, D.C. *1935*

Upgren, Arthur R., 1625 River Rd., E., Minneapolis 14, Minn. *1932*

Upham, Cyril B., Racquet Club, Washington, D.C. *1931*

Upton, R. Miller, 2731 Hartzell St., Evanston, Ill. *1938*

Usher, Abbott Payson, 37 Chestnut St., Salem, Mass. *1911*

Vail, Robert P., Montgomery Pl., Decatur, Ill. *1940*

Vaile, Roland S., 87 Orin Ave., Minneapolis, Minn. *1924*

Valencia Cárdenas, José, Edificio "Sud-América," Segundo Piso, Plaza San Martín, Lima, Peru, South America. *1943*

Valenstein, Cornelia (Mrs. Samuel), Crompond, N.Y. *1943*

Valentine, Roger W., Halsey, Stuart and Co., 123 S. La Salle St., Chicago 90, Ill. *1924*

Valgren, Victor N., 2947 Macomb St., N.W., Washington 8, D.C. *1910*

Valk, Willem L., Weiszenbruchstraat 398, 's Gravenhage, Holland. *1928*

Van Antwerpen, Franklin J., 12-50 Burbank St., Fair Lawn, N.J. *1944*

Van Arsdell, Paul M., The Hedges, Library Rd., R.D. 1, Library, Pa. *1934*

Vance, Lawrence L., Univ. of Minnesota, School of Bus., Minneapolis 14, Minn. *1942*

Vance, Rupert B., Univ. of North Carolina, Chapel Hill, N.C. *1938*

Vanderblue, Homer B., 2629 Stewart Ave., Evanston, Ill. *1911*

Vandermeulen, Alice J. (Mrs. Daniel C.), 417 Commander Hotel, Cambridge 38, Mass. *1943*

Van de Woestyne, Royal S., 5428 Woodlawn, Apt. 2D, Chicago, Ill. *1922*

Van Horn, Edna, Oregon State Col., School of Home Econ., Corvallis, Ore. *1944*

Van Horne, John, Dept. of State, Mail Div., Washington, D.C. *1944*

Vanier, Guy, 57 St. James St., W., Montreal, Que., Canada. *1946*

Van Kirk, Jay C., Tulane Univ., Col. of Com., New Orleans 15, La. *1937*

Van Kleeck, Mary, 130 E. 22nd St., New York, N.Y. *1916*

Van Metre, Thurman W., 35 Claremont Ave., New York, N.Y. *1916*

Van Sant, Edward R., 5808 44th Ave., Hyattsville, Md. *1930*

Van Scoyoc, Leland S., Univ. of Dubuque, Dubuque, Iowa. *1946*

Van Sickle, John V., Vanderbilt Univ., Nashville 4, Tenn. *1924*

Van Syckle, Calla, Carnegie Inst. of Tech., Pittsburgh 13, Pa. *1942*

Van Toor, J. E., Rinehart and Co., 232 Madison Ave., New York 16, N.Y. *1933*

Van Tuyl, Helen L., 1305 30th St., N.W., Washington, D.C. *1942*

Van Voorhis, Robert H., Box 395, Summerville, S.C. *1940*

Van Winkle, Edward H., 1 Seymour Ct., Troy, N.Y. *1935*
Vargas, Carlos A., Cra 3ª, No. 6-37, Ibaque, Colombia, South America. *1945*
Vatter, Harold, 2838 Derby St., Berkeley 5, Calif. *1944*
Vatter, William J., 8447 Constance Ave., Chicago, Ill. *1941*
Vaughn, James A., 232 North Rd., Bedford, Mass. *1943*
Veatch, Roy, 1314 34th St., N.W., Washington, D.C. *1940*
Veigel, Marshall A., 3205 Broadview Rd., Cleveland, Ohio. *1945*
Venstrom, Cruz, 935 Oxford St., Berkeley 7, Calif. *1931*
Vermeer, James, 4360 N. Pershing Dr., Arlington, Va. *1942*
Viau, Sister Joseph Marie, Marymount Col., Salina, Kans. *1938*
Vickers, Enoch H., 820 College Ave., Morgantown, W.Va. *1902*
Vickrey, William S., 5 Hamilton Rd., Scarsdale, N.Y. *1936*
Vieth, Arthur G., Jr., Missouri Valley Col., Marshall, Mo. *1942*
Villard, Henry H., 1520 33rd St., N.W., Washington 7, D.C. *1935*
Villasenor, Eduardo, 2a. Privada Frontera No. 14, Villa Alvaro Obregon, Mexico, D.F. *1927*
Viner, Jacob, Univ. of Chicago, Faculty Exchange, Chicago, Ill. *1920*
Vining, D(an) Rutledge, Univ. of Virginia, Charlottesville, Va. *1937*
Virtue, George O., Univ. of Nebraska, Lincoln, Neb. *1911*
Vitolo, John L., 1926 Tomlinson Ave., Bronx, New York 61, N.Y. *1946*
Vivian, Glenn F., Western Lines, Statis. Bur., 416 Chicago Union Sta., Chicago, Ill. *1939*
Vogel, John H., U. S. Tariff Com., Washington, D.C. *1946*
Vogt, Paul L., U. S. Dept. of Agric., Bur. of Agric. Econ., Washington, D.C. *1936*
von Beckerath, Herbert, Duke Sta., Durham, N.C. *1934*
von Ciriacy-Wantrup, Siegfried, Univ. of California, 207 Giannini Hall, Berkeley, Calif. *1940*
Von Haunalter, Eberhart, 211 E. 71st St., New York, N.Y. *1943*
von Mering, Otto O., 21 Berkeley St., Cambridge, Mass. *1941*
Voorhies, Edwin C., Univ. of California, Col. of Agric., Berkeley, Calif. *1925*
Voorhis, Jerry, 501 Old House Office Bldg., Washington, D.C. *1942*
Voss, Wellington J., 439 Ingraham St., N.W., Washington 11, D.C. *1943*
Wachtel, Sidney B., 715 Madison St., N.W., Washington, D.C. *1942*
Waeltermann, John J., 4019 N. 22nd St., St. Louis 7, Mo. *1946*
Wagner, Martin, 1200 Ingalls Bldg., 6 E. 4th St., Cincinnati 2, Ohio. *1939*
Waite, Warren C., Div. of Agric. Econ., University Farm, St. Paul, Minn. *1924*
Wald, Haskell P., 2715 Terrace Rd., S.E., Washington 20, D.C. *1942*
Waldeck, Herman, Continental Illinois Nat. Bank and Trust Co., 231 S. La Salle St., Chicago, Ill. *1934*
Wales, Hugh G., 3005 W. 19th St., Topeka, Kans. *1936*
Walinsky, Louis J., 1660 Lanier Pl., N.W., Washington, D.C. *1944*
Walker, Dilworth, Univ. of Utah, Salt Lake City, Utah. *1937*
Walker, Francis, 3081 Cleveland Ave., N. W., Washington 8, D.C. *1895*
Walker, John E., 631 Tower Bldg., 14th and K Sts., N.W., Washington, D.C. *1921*
Walker, Mabel L., Tax Inst., 150 Nassau St., New York 7, N.Y. *1928*
Walker, Q. Forrest, R. H. Macy and Co., Executive Offices, New York, N.Y. *1937*
Walkinshaw, Mary D., Stuyvesant Hall, Delaware, Ohio. *1946*
Wall, Norman J., U. S. Dept. of Agric., Bur. of Agric. Econ., Washington, D.C. *1936*
Wallace, Benjamin B., U. S. Tariff Com., Washington 25, D.C. *1923*
Wallace, Donald H., 4601 47th St., N.W., Washington, D.C. *1928*
Wallace, Elbert S., OPA Reg. Office, Candler Bldg., Atlanta, Ga. *1941*
Wallace, George S., Jr., 657 85th St., Brooklyn 19, N.Y. *1945*
Wallace, Mattie L., 2032 Belmont Rd., Washington, D.C. *1943*
Wallace, Phyllis A., Yale Grad. Women's Clubhouse, 370 Temple St., New Haven, Conn. *1944*
Wallich, Henry C., 33 Liberty St., New York 7, N.Y. *1946*
Wallin, James R., State Teachers Col., Eau Claire, Wis. *1946*
Wallis, W. Allen, Dept. of Econ., Stanford University, Calif. *1942*
Walradt, David, High Acres, R.F.D. 1, Tucson, Ariz. *1943*
Walsh, Charles J., Fordham Univ., Grad. School of Arts and Sci., New York 58, N.Y. *1937*
Walsh, Floyd E., 2869 California St., Omaha, Neb. *1942*
Walsh, John J., 1341 Quincy St., N.W., Washington, D.C. *1942*

Walter, Edwin J., 375 Park Ave., New York 22, N.Y. *1917*

Walter, John T., City Col. of New York, 17 Lexington Ave., New York 10, N.Y. *1946*

Waltersdorf, Maurice C., 212 N. Wade Ave., Washington, Pa. *1925*

Walther, Herman O., 65 W. Jackson Blvd., Chicago, Ill. *1938*

Walton, Ina T. (Mrs.), 2208 Sherman Ave., Evanston, Ill. *1936*

Wandel, William H., 1802 N. Wakefield St., Arlington, Va. *1929*

Wang, Ethan, 214 S. 37th St., Philadelphia, Pa. *1945*

Waples, Eliot O., Univ. of Wisconsin, 208 Agric. Hall, Madison 6, Wis. *1942*

Warburton, Amber A. (Mrs. Clark), McLean, Va. *1941*

Warburton, Clark, McLean, Va. *1922*

Ward, Frank B., 400 Forest Hills Blvd., Knoxville 16, Tenn. *1924*

Ward, James E., Jr., Clemson Col., Clemson, S.C. *1934*

Wardwell, Allen, 15 Broad St., New York, N.Y. *1912*

Wardwell, Charles A. R., 37 Beacon Hill Rd., Port Washington, L.I., N.Y. *1929*

Waring, Frank A., Bur. of For. and Dom. Com., 3860 Commerce Dept. Bldg., Washington 25, D.C. *1935*

Warne, Frank J., 1520 H St., N.W., Washington, D.C. *1915*

Warner, Donald A., 4815 N. Capital St., Apt. 302, Washington 11, D.C. *1946*

Warner, Florence M., Connecticut Col., New London, Conn. *1945*

§**Warner,** Philip J., 15 E. 26th St., New York 10, N.Y. *1911*

Warner, Robert K., University Club, Washington, D.C. *1932*

Warner, Wellman J., Dickinson Col., 3 Denny Hall, Carlisle, Pa. *1935*

***Warren,** David M., Box 428, Panhandle Herald, Panhandle, Tex. *1944*

Warren, Edgar L., U. S. Conciliation Service, Dept. of Labor, Washington 25, D.C. *1943*

Warren, Forest G., 4102 N. 3rd Rd., Arlington, Va. *1943*

Warren, Gerald E., 718 E. Seminary, Greencastle, Ind. *1943*

Warrington, William E., 209 Logan Hall, 36th and Woodland, Philadelphia, Pa. *1935*

Warshow, H. T., Nat. Lead Co., 111 Broadway, New York 6, N.Y. *1945*

Warters, Dennis N., c/o Bankers Life Co., Des Moines, Iowa. *1934*

Washburn, Horace H., Univ. of Wichita, Wichita, Kans. *1944*

Wasson, Robert C., 2009 Ridge Pl., S.E., Washington 20, D.C. *1941*

Waters, Lawrence L., 1629 Alabama, Lawrence, Kans. *1937*

Waters, R(ichard) Hadly, Pennsylvania State Col., State College, Pa. *1938*

Watkins, Gordon S., Univ. of California, Los Angeles, Calif. *1917*

Watkins, John B., 405 Wesley Ave., Oak Park, Ill. *1925*

Watkins, Leonard L., Univ. of Michigan, Dept. of Econ., Ann Arbor, Mich. *1922*

Watkins, Myron W., R.F.D. 1, Stamford, Conn. *1915*

Watkins, Ralph J., 210 E. 63rd St., New York 21, N.Y. *1923*

Watson, Donald S., George Washington Univ., Washington, D.C. *1939*

Watson, Dorothy E., Rockford Col., Rockford, Ill. *1946*

Watson, George H., 2150 W. North Ave., Chicago 47, Ill. *1943*

Watson, J(ames) Donald, Col. of William and Mary, Norfolk Div., Norfolk 8, Va. *1933*

Watson, Jesse P., Univ. of Pittsburgh, Bur. of Bus. Res., Pittsburgh, Pa. *1929*

Watson, Merrill A., Tanners' Council of America, 100 Gold St., New York, N.Y. *1936*

Watson, William J., 4780 Sheridan Dr., Williamsville, N.Y. *1945*

Watson, William N., 10 Monroe St., New York 2, N.Y. *1942*

Watt, John R., 1011 W. 31st St., Austin 21, Tex. *1941*

Watt, Robert W., 30 Morris Ave., Morristown, N.J. *1942*

Watts, V(ervon) Orval, Los Angeles Chamber of Commerce, Los Angeles, Calif. *1937*

Waugh, Albert E., Univ. of Connecticut, Storrs, Conn. *1928*

Weaver, Donald V., 510 Dryden Rd., Ithaca, N.Y. *1929*

Weaver, Findley, Embassy of the U. S., Lima, Peru, South America. *1944*

Weaver, Robert C., American Council on Race Rela., 32 W. Randolph St., Chicago 1, Ill. *1945*

‡**Webb,** Sidney, Passfield Corner, Liphook, Hants, England. *1929*

Webb, William Y., 3614 Warren St., N.W., Washington 8, D.C. *1944*

Webbink, Gladys F. (Mrs. Paul), 3319 Tennyson St., N.W., Washington 15, D.C. *1946*

Webbink, Paul, 3319 Tennyson St., N.W., Washington 15, D.C. *1939*

Weber, Adna F., 8521 114th St., Richmond Hill 18, L.I., N.Y. *1896*

Weber, C(amille) Jerome, P. O. Box 63, Chappaqua, N.Y. *1946*

Weber, Georges M., 6 Wetherill Rd., Friendship Sta., Washington 16, D.C. *1923*
Weber, Herbert J., 1701 16th St., N.W., Washington 9, D.C. *1945*
Weber, Paul J., Hercules Powder Co., Delaware Trust Bldg., Wilmington, Del. *1930*
Weeks, Dale H., Nebraska Wesleyan Univ., Lincoln, Neb. *1945*
Wehrwein, Carl F., 705 N. Overlook Dr., Alexandria, Va. *1936*
Weidenhammer, R. M., 5406 Worthington Dr., Washington 16, D.C. *1942*
Weidler, Walter C., Ohio State Univ., Columbus 10, Ohio. *1922*
Weil, Felix J., 90 Morningside Dr., New York 27, N.Y. *1943*
Weil, Rolf A., 1162 E. 54th Pl., Chicago, Ill. *1943*
Weiler, Emanuel T., 110 University Ave., Delaware, Ohio. *1945*
Weimer, A. M., Indiana Univ., Bloomington, Ind. *1946*
Wein, Harold H., 1300 N. Tuckahoe St., Falls Church, Va. *1945*
Weinberg, Nathan, 2825 31st St., S.E., Washington 20, D.C. *1943*
Weiner, Clarence M., 2327 15th St., N.W., Washington 9, D.C. *1942*
Weiner, Louis, 4215 Russell Ave., Mt. Rainier, Md. *1944*
Weinfeld, William, 505 Brook Dr., Falls Church, Va. *1946*
Weinryb, Bernard D., 606 W. 113th St., New York 25, N.Y. *1945*
Weinstein, Aaron H., 1650 Lee Rd., Cleveland Heights 18, Ohio. *1946*
Weinstein, Abbott S., Princeton Univ., 103 Grad. Col., Princeton, N.J. *1945*
Weintraub, David, 6615 5th St., N.W., Washington 12, D.C. *1936*
Weinwurm, Ernest H., 565 W. 215th St., New York, N.Y. *1941*
Weisblat, Abraham M., 1833 New Hampshire Ave., N.W., Washington, D.C. *1946*
Weisman, Russell, Western Reserve Univ., Cleveland, Ohio. *1920*
Weiss, Francis J., 4110 Jenifer St., N.W., Washington 15, D.C. *1940*
Weiss, Franz X., 10 The Avenue, Orpington, Kent, England. *1928*
Weiss, George, J. S. Bache and Co., 36 Wall St., New York, N.Y. *1924*
Weiss, Harry, 6602 Delafield St., Chevy Chase, Md. *1939*
Weiss, Leonard, 3835 Calvert St., Washington 7, D.C. *1942*
Weiss, Melvin A., 226 Henry St., New York 2, N.Y. *1946*
Weiss, Samuel, 3073 S. Buchanan, Fairlington, Va. *1945*
Weisskopf, Walter A., 5555 S. Blackstone Ave., Chicago, Ill. *1939*
Weissman, Rudolph L., Cole, Hoisington and Co., 120 Broadway, New York 5, N.Y. *1936*
Weitz, Leo, 1225 Ave. R, Brooklyn, N.Y. *1940*
Welch, Emmett H., 3703 34th St., N.W., Washington, D.C. *1942*
Welch, Ronald B., 4907 Crescent St., via Friendship Sta., D.C., Crestview, Md. *1931*
Weld, Louis D. H., 50 Rockefeller Plaza, New York, N.Y. *1910*
Weld, William E., Wells Col., Aurora, N.Y. *1921*
Welden, John, Jr., H. J. Heinz Co., Pittsburgh, Pa. *1943*
Welden, William C., H. P. Hood and Sons, 500 Rutherford Ave., Boston 29, Mass. *1939*
Welfling, Weldon W., R. 1, Box 26, Pickett Rd., Durham, N.C. *1936*
Welk, William G., UNRRA, Washington, D.C. *1934*
Wellington, C(harles) Oliver, 111 Broadway, New York, N.Y. *1912*
Wellisz, Leopold, 120 Cabrini Blvd., New York 33, N.Y. *1943*
Wellman, Charles A., Jr., 2136 Fifth Ave., Los Angeles, Calif. *1944*
Wellman, Harry R., Univ. of California, 207 Giannini Hall, Berkeley, Calif. *1943*
Wellman, Hiller C., City Library Asso., Springfield, Mass. *1908*
Wells, Charles C., 135 S. La Salle St., Chicago, Ill. *1937*
Wells, Herman B, Indiana Univ., Bloomington, Ind. *1930*
Welsh, Charles A., 203 N. Trenton St., Arlington, Va. *1944*
Welsh, Edward C., 4838 28th St., S., Arlington, Va. *1935*
Welsh, Lee M., Procter and Gamble Co., Gwynne Bldg., Cincinnati 1, Ohio. *1934*
Wendt, Edwin F., Union Trust Bldg., Pittsburgh 19, Pa. *1915*
Wendt, Paul F., Univ. of California, School of Bus. Admin., Berkeley, Calif. *1940*
Wendzel, Julius T., R.R. 1, Eau Claire, Mich. *1929*
Wennstrom, John M., 102 Maiden Lane, New York, N.Y. *1940*
Wentworth, Edna C. (Mrs.), Soc. Sec. Bd., Equitable Bldg., Rm. 812, Baltimore, Md. *1934*
Wentworth, Edward N., Armour's Livestock Bur., Union Stock Yards, Chicago, Ill. *1924*
Wenzlick, Roy, Roy Wenzlick and Co., Lib., 706 Chestnut St., St. Louis 1, Mo. *1938*
Wermel, Michael T., Bur. of Emp. Sec., 1825 H

St., N.W., Rm. 1012, Washington 25, D.C. *1936*

Wermuth, Robert P., 2105 Melrose Ave., Rockford, Ill. *1940*

Wernette, J(ohn) Philip, Univ. of New Mexico, Albuquerque, N.M. *1927*

West, C. H., Box 152, Sunol, Calif. *1926*

West, Daniel W., 3620 16th St., N.W., Washington 10, D.C. *1945*

West, Miriam E., New Jersey Col. for Women, New Brunswick, N.J. *1927*

West, Robert J., 206 Devonshire Apts., 1504 N. Prospect Ave., Milwaukee, Wis. *1936*

West, Robert R., Box 1085, Chappaqua, N.Y. *1941*

Westefeld, Albert, 3531 Martha Custis Dr., Alexandria, Va. *1944*

Westerfield, Ray B., Drawer 94A, Yale Sta., New Haven, Conn. *1912*

Weston, Janet L., 808 W. Park Ave., Champaign, Ill. *1940*

Weston, J(ohn) Frederick, 100 W. Monroe St., Suite 2200, Chicago 3, Ill. *1941*

Wexman, Joseph K., 732 E. 38th St., Minneapolis, Minn. *1944*

Weyforth, William O., Johns Hopkins Univ., Baltimore, Md. *1915*

Weyl, Nathaniel, 1505 28th St., N.W., Washington, D.C. *1946*

Whalen, Oren L., 208 W. Washington, Urbana, Ill. *1925*

Whaley, Otis, Henderson State Teachers Col., Dept. of Econ. and Bus. Admin., Arkadelphia, Ark. *1938*

Wheelan, Frank N., 2842A N. 33rd St., Milwaukee 10, Wis. *1944*

Wheeler, Bayard O., 1910 E. Lynn St., Seattle 2, Wash. *1937*

Wheeler, Oliver P., Fed. Res. Bank of San Francisco, Div. of Res., San Francisco, Calif. *1937*

Whelan, Carl J., 3600 S St., N.W., Washington, D.C. *1929*

Whelpton, Pascal K., Scripps Found., Oxford, Ohio. *1920*

Whipple, Clayton E., 1545 Key Blvd., Arlington, Va. *1944*

Whitaker, Albert C., Stanford University, Calif. *1902*

Whitaker, Benjamin P., Union Col., Schenectady, N.Y. *1925*

White, Charles P., Univ. of Tennessee, School of Com., Knoxville, Tenn. *1924*

White, Henry F., John Brown Univ., Div. of Econ. and Bus. Admin., Siloam Springs, Ark. *1945*

White, J. Austin, Union Central Bldg., Cincinnati, Ohio. *1945*

White, Melvin I., 1530 E. Genesee St., Syracuse 10, N.Y. *1943*

White, Wilford L., 3131 Nebraska Ave., N W., Washington, D.C. *1922*

Whitehead, Frances M., Western Illinois State Teachers Col., Macomb, Ill. *1945*

Whitehill, Arthur M., Jr., Univ. of Virginia, Univ. Sta., Charlottesville, Va. *1945*

Whitlach, George I., 2807 Sherbourne Dr., Nashville 4, Tenn. *1944*

§**Whitlo,** Charles M., 12132 S. 70th Ave., Palos Heights, Ill. *1946*

Whitlow, Claude J., 435 Canby St., Vermillion, S.D. *1946*

Whitman, Marcus L., Box 907, University, Ala. *1929*

Whitman, Roswell H., 1940 Biltmore St., N.W., Washington, D.C. *1934*

Whitman, William T., The Citadel, Charleston, S.C. *1940*

Whitney, Nathaniel R., Glendale, Ohio. *1911*

Whitney, Ramey C., Univ. of Missouri, Mumford Hall, Columbia, Mo. *1946*

Whitney, Simon N., Deep Springs, Calif. *1927*

Whitsett, James M., Cleveland Col., Western Reserve Univ., 167 Public Sq., Cleveland 14, Ohio. *1937*

Whitten, William M., 2308 McDonough Rd., Wilmington 56, Del. *1942*

Whittlesey, Charles R., Wallingford, Pa. *1925*

Wiberg, Martin, Scanlan Bldg., Rm. 811, Houston, Tex. *1945*

Wichman, Arthur A., 1148 N. Terrace Dr., Wichita 6, Kans. *1941*

Wick, James L., Prentice-Hall, 70 Fifth Ave., New York, N.Y. *1944*

Wickens, Aryness J. (Mrs. David L.), R. 2, Vienna, Va. *1944*

Wickens, David L., R. 2, Vienna, Va. *1933*

Wickizer, Vernon D., Food Res. Inst., Stanford University, Calif. *1943*

Wiedeman, Harold C., U. S. Civil Service Com., Denver, Colo. *1942*

Wiener, Robert J., 16895 Iverness, Detroit 21, Mich. *1944*

Wiers, Paul, 5603 Northfield Rd., Bethesda 14, Md. *1939*

Wiesen, Thomas F., 2216 Broadway, Lubbock, Tex. *1939*

Wiesenfeld, Henry M., 3023 St. Paul St., Baltimore, Md. *1928*

Wiest, Edward, Univ. of Kentucky, Lexington, Ky. *1916*

Wigder, Philon, 1329 Fort Stevens Dr., N.W., Washington 11, D.C. *1945*

Wightman, Guy J., Dairymen's League Co-operative Asso., 11 W. 42nd St., New York, N.Y. *1941*

Wilber, Allen S., F. S. Crofts and Co., 101 Fifth Ave., New York, N.Y. *1928*
Wilcox, Charles A., 4449 N. Wolcott Ave., Chicago 40, Ill. *1942*
Wilcox, Clair, 407 Rosemary St., Chevy Chase, Md. *1923*
Wilcox, Robert W., R. 3, Ames, Iowa. *1946*
Wilcox, Sidney W., U. S. Bur. of Labor Statis., Washington, D.C. *1920*
Wilcox, Walter W., 221 Lathrop St., Madison, Wis. *1941*
Wilder, Francis S., 5109 45th St., N.W., Washington 16, D.C. *1945*
Wiley, Jay W., Purdue Univ., Dept. of Hist. and Econ., West Lafayette, Ind. *1937*
Wilkey, Harry L., Iowa Wesleyan Col., Mt. Pleasant, Iowa. *1946*
Wilkie, Horace W., 3909 Euclid Ave., Madison, Wis. *1945*
Willcox, Walter F., 3 South Ave., Ithaca, N.Y. *1892*
Willett, Edward F., 25 Remsen St., Brooklyn 2, N.Y. *1938*
Willhite, W. Lyle, Catawba Col., Salisbury, N.C. *1946*
Williams, Alfred H., Fed. Res. Bank, 925 Chestnut St., Philadelphia, Pa. *1921*
Williams, Charles W., Univ. of Louisville, Dept. of Econ. and Com., Louisville, Ky. *1945*
Williams, Constance, 9603 Riley Pl., Silver Spring, Md. *1943*
Williams, Conway S., 20 Spring St., Westerly, R.I. *1940*
Williams, Elgin, 29 W. 104th St., New York 25, N.Y. *1945*
Williams, Ernest W., Jr., 6427 16th St., N.W., Washington, D.C. *1943*
Williams, Faith M., U. S. Dept. of Labor, Bur. of Labor Statis., Washington, D.C. *1925*
Williams, John B., 30 Lowell Rd., Wellesley Hills, Mass. *1939*
Williams, John H., Harvard Univ., Littauer Center, Cambridge 38, Mass. *1919*
Williams, Kenneth B., 124 Grafton St., Chevy Chase 15, Md. *1937*
Williams, Oscar H., 609 S. Fess Ave., Bloomington, Ind. *1944*
Williams, Randall S., Dept. of State, Foreign Mail Div., Washington, D.C. *1944*
Williams, Roger H., 40 Wall St., New York, N.Y. *1913*
Williams, Whiting, 3030 Euclid Ave., Cleveland, Ohio. *1942*
Williamson, Harold F., 593 Yale Sta., New Haven, Conn. *1935*
Williamson, Kossuth M., Wesleyan Sta., Middletown, Conn. *1920*
Williamson, William R., 3400 Fairhill Dr., Anacostia, D.C. *1942*
Willis, J(ohn) Brooke, Columbia Univ., 514 School of Bus., New York 27, N.Y. *1933*
Willits, Joseph H., Rockefeller Found., 49 W. 49th St., New York 20, N.Y. *1919*
Wills, John H., Northern Trust Co., 50 S. La Salle St., Chicago, Ill. *1940*
Wilmot, William V., Jr., 161 Hillside Ter., Irvington 11, N.J. *1942*
Wilson, David Stevens, 5205 Roosevelt St., Bethesda 14, Md. *1941*
Wilson, Edwin B., 55 Shattuck St., Boston, Mass. *1912*
Wilson, Elizabeth W., 1 Waterhouse St., Cambridge, Mass. *1929*
Wilson, G. Lloyd, Univ. of Pennsylvania, 203 Logan Hall, Philadelphia, Pa. *1946*
Wilson, Howard, 2711 Giddings St., Chicago 25, Ill. *1944*
Wilson, Howard W., Reservoir Ave., R.F.D. 1, Olneyville Sta., Johnston, R.I. *1929*
Wilson, John D., 12 Orchard Pkwy., White Plains, N.Y. *1946*
Wilson, Walter C., 33 S. High St., New Britain, Conn. *1940*
Wimsatt, Genevieve, B., 3721 Alton Pl., N.W., Washington 16, D.C. *1941*
Windhorst, Richard B., Bemis Bro. Bag Co., 604 S. 4th St., Minneapolis, Minn. *1945*
Wingate, John W., New York Univ., School of Retailing, Washington Sq., New York, N.Y. *1929*
Winn, Willis J., Hillside, W. 254th St. and Independence Ave., Riverdale, New York, N.Y. *1941*
Winslow, Earle M., U. S. Tariff Com., Washington, D.C. *1923*
Wintergalen, Edward, Regis Col., Econ. Div., Denver 11, Colo. *1946*
Winters, Robert A., 504 Garfield St., S., Arlington, Va. *1937*
Witcover, Henry W., 4905 29th Rd., S., Arlington, Va. *1941*
Withers, William H., 399 E. 52nd St., New York 22, N.Y. *1928*
Witte, Edwin E., Univ. of Wisconsin, Sterling Hall, Madison 6, Wis. *1920*
Woerner, Kurt, Redroof, Wynnewood, Pa. *1937*
Wohl, R. Richard, 232 Vernon Ave., Brooklyn 6, N.Y. *1945*
Wolf, Alois F., Hills Brothers Co., 110 Washington St., New York, N.Y. *1942*
Wolf, Harry D., 1 Davie Wood, Chapel Hill, N.C. *1926*
Wolf, Ronald H., 714 1st, N., Seattle 9, Wash. *1941*
Wolfard, John A., Montana State Univ., Dept. of Econ. and Soc., Missoula, Mont. *1942*
Wolfe, Albert B., Ohio State Univ., Columbus 10, Ohio. *1905*

Wolfe, French E., Procter and Gamble Co., Econ. Res. Dept., Cincinnati, Ohio. *1912*
Wolff, Reinhold P., Univ. of Miami, Coral Gables, Fla. *1938*
Wolfort, Ruth E., 125 Prospect Park, W., Brooklyn, N.Y. *1943*
Wolfson, Theresa, 810 E. 19th St., Brooklyn, N.Y. *1930*
Wolkiser, Arthur M., 15 William St., New York, N.Y. *1935*
Wollman, Nathaniel, Colorado Col., Colorado Springs, Colo. *1938*
Wolman, Abel, Johns Hopkins Univ., Homewood, Baltimore 18, Md. *1924*
Wolman, Leo, 1819 Broadway, New York, N.Y. *1915*
Wood, Elmer, Univ. of Missouri, Columbia, Mo. *1931*
Wood, Helen, 1916 G St., N.W., Apt. 2, Washington 6, D.C. *1945*
Wood, Loring, 6200 Walhonding Rd., Washington 16, D.C. *1945*
Wood, Louis A., Univ. of Oregon, Dept. of Econ., Eugene, Ore. *1930*
Wood, Ralph C., c/o O. C. Hays, Katonah, N.Y. *1938*
Wood, Ramsay, 7410 Piney Branch Rd., Washington 12, D.C. *1939*
Wood, Richard H., R.D. 1, Mount Lucas Rd., Princeton, N.J. *1942*
Woodbury, Coleman, NHA, Washington, D.C. *1945*
Woodbury, Robert M., Int. Labour Office, McGill Univ., Montreal, Que., Canada. *1912*
Woodruff, Ruth J., Univ. of New Hampshire, Durham, N.H. *1935*
Woods, Robert M., Saint Mary's Col., Winona, Minn. *1940*
Woodward, Charles G., 742 Asylum Ave., Hartford, Conn. *1913*
Woodward, Donald B., 205 W. 54th St., New York, N.Y. *1945*
Woodworth, G(eorge) Walter, Dartmouth Col., Amos Tuck School, Hanover, N.H. *1928*
Woodworth, Laurence N., 2810 Crest Ave., Cheverly, Md. *1945*
Woolfson, A. Philip, 986 Woodland Ave., Plainfield, N.J. *1944*
Woolly, Herbert B., 1923 Seminary Rd., Alexandria, Va. *1942*
Woosley, John B., Chapel Hill, N.C. *1927*
Wooster, Harvey A., 79 S. Cedar St., Oberlin, Ohio. *1911*
Worcester, Dean A., Jr., Univ. of Georgia, Col. of Bus. Admin., Athens, Ga. *1942*
Working, Elmer J., Univ. of Illinois, Dept. of Agric. Econ., Urbana, Ill. *1922*
Working, Holbrook, Food Res. Inst., Stanford University, Calif. *1945*
Worley, Frederick M., Univ. of Pennsylvania, Wharton School, Philadelphia 4, Pa. *1942*
Wormser, Felix E., 420 Lexington Ave., New York 17, N.Y. *1924*
Worsley, Thomas B., Army Indus. Col., Pentagon Bldg., Washington, D.C. *1941*
Woytinsky, Wladimir S., 5036 Massachusetts Ave., N.W., Washington 16, D.C. *1939*
Wright, C(harles) Ashley, Box 34, R.F.D. 5, Alexandria, Va. *1937*
Wright, Charles C., Bridgewater Col., Bridgewater, Va. *1929*
Wright, Chester W., Univ. of Chicago, Chicago 37, Ill. *1904*
Wright, David M., 1940 Thomson Rd., Charlottesville, Va. *1939*
Wright, Henry G., 222 W. Adams St., Chicago, Ill. *1926*
Wright, Ivan, Niagara-on-the-Lake, Ont., Canada. *1921*
Wright, John W., 429 Whittier St., N.W., Washington, D.C. *1931*
Wright, Milton S. J., Wilberforce Univ., Wilberforce, Ohio. *1943*
Wright, Wallace, 713 8th St., Ames, Iowa. *1931*
Wright, Warren F., 2322 Kenmore Ave., Chicago, Ill. *1946*
Wright, Wilson, Armstrong Cork Co., Lancaster, Pa. *1941*
Wu, Chee-Hsien, 42 Kirkland St., Cambridge 38, Mass. *1944*
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James, K. V.
Leonard, W. N.
Pub. Lib., Huron Sq.

Lawrence

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Gagliardo, D.
Howey, R. S.
Ise, J.
Morgan, J. D.
Nelson, E. G.
Pritchard, L. J.
Seelye, A. L.
Stockton, F. T.
Univ. of Kansas, Univ. Ext. Div.
Univ. of Kansas Lib., Periodical Dept.
Waters, L. L.

Leavenworth

U. S. Prison Commissary, PMB No. 59550

Lindsborg

Bethany Col. Lib.
De Cow, D. F.

Manhattan

Grimes, W. E.

Hodges, J. A.
Kansas State Col. Lib.
Manuel, M. L.
Tjerandsen, C.

McPherson

Olson, O. A.

North Newton

Bethel Col. Lib.

Ottawa

Hall, C. A., Jr.
Lee, J. F.
Ottawa Univ. Lib.

Pittsburg

Greef, A. O.
Kansas State Teachers Col., Porter Lib.

St. Marys

Porter, R. L.

Salina

Finn, Sister I. M.
Viau, Sister J. M.

Sterling

Sterling Col. Lib.

Topeka

Dugan, J. E.
Kansas State Lib., State House
Topeka Free Pub. Lib.
Wales, H. G.
Washburn Municipal Univ. Lib.

Wichita

Friends Univ. Lib.
Neff, F. A.
Ricketts, F. M.
Washburn, H. H.
Wichita City Lib.
Wichman, A. A.

Winfield

Southwestern Col. Lib.

KENTUCKY

Barbourville

Smith, P. M.
Smith, Mrs. P. M.
Union Col. Lib.

Berea

Berea Col. Lib.
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Bowling Green

Bowling Green Bus. Univ. Lib.
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Centre Col. Lib.
Hillhouse, A. M.
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Carter, L. H.
Clark, C. M.
Hall, W. S.
Jennings, W. W.
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McVey, F. L.
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Transylvania Univ. Lib.
Univ. of Kentucky Lib.
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Louisville Free Pub. Lib., 301 Library Pl.
Louisville Municipal Col. Lib., 7th and Kentucky Sts.
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Williams, C. W.

Murray

Murray State Teachers Col. Lib.

Richmond

Eastern Kentucky State Teachers Col. Lib., Lancaster Ave.
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Wilmore

Harrison, R. W.

LOUISIANA

Baton Rouge

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Preston, S. W.
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Grand Coteaû

Col. and Acad. of the Sacred Heart

Greenwood

Shelby, D. D.

Hammond

Southeastern Louisiana Col. Lib.

Lafayette

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Phillips, W. J.
Southwestern Louisiana Inst. Lib.

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Smolinski, H. J.

Natchitoches

Northwestern State Col. Lib.

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Blomberg, C. L.
Bonnett, C. E.
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Elsasser, R. W.
Halley, D. M.
Heck, H. J.
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Howard Tilton Memorial Lib., Audubon Pl. and Freret
Jones, A. H.
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Mitchell, H. A.
New Orleans Pub. Lib.
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Trump, R. M.
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Xavier Univ., New Unit, Washington and Pine Sts.

Ruston

Louisiana Poly. Inst. Lib.

Scotlandville

Southern Univ. Lib., Dept. of Educa.

Shreveport

Centenary Col. Lib.

MAINE

Bangor

Bangor Pub. Lib.

Brunswick

Bowdoin Col. Lib.
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Calais

Checchi, V.

Kittery

Alvord, G. G.

Lewiston

Bates Col. Lib.

Orono

Kirshen, H. B.
Univ. of Maine Lib.

Portland

Goodbar, J. E.
Jordan and Jordan, Fidelity Bldg.
Roberts, W. H.

Springvale

Nasson Col. Lib.

Waterville

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Morrow, C. H.
Pullen, R. W.
Rosen, Robert, Colby Col., 34 Chaplin Hall

Winterport

Fernald, R. L.

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Aberdeen Proving Ground

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Traywick, L. E.

Annapolis

Handy, W. K., Jr.
U. S. Naval Academy Lib.

Baldwin

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Baltimore

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Troxell, J. P.
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Wiesenfeld, H. M.
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Bethesda

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Brooklandville

MacGarvey, C. J.

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Catonsville

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Chestertown

Washington Col., George Avery Bunting Lib.

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Chevy Chase

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Black, H. R. E.
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Deupree, R. G.
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Maher, A. G.
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Marshall, L. C.
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Myers, H. B.
Nicol, H. O.
Norman, T.
Potter, A. N.
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Rogers, H. O.
Rowe, H. B.
Schmidt, O. A.
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Williams, K. B.
Wynne, W. H.
Young, J. P.

College Park

Calhoun, C. E.
Clark, L. H.
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Dillard, D.
Dillard, L. G.

Gruchy, A. G.
Hagen, E. E.
Halaas, E. T.
Munk, F.
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Univ. of Maryland Lib.
Wyckoff, V. J.

Emmitsburg

Phillips, Hugh J., Lib., Mount St. Mary's Col.
St. Joseph's Col. Lib.

Frederick

Reddick, O. I.

Garrett Park

Brown, G. T.

Greenbelt

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La Macchia, F. R.
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Hyattsville

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Mt. Rainier

Atterberry, P. R.
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Boner, J. R.
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Cooper, H. S.
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Tomasevich, J.
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North Chevy Chase

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Pikesville

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Riverdale

Johnson, R. E.

Rockville

May, R. A.
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Salisbury

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Silver Spring

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Andrus, J. R.
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Clorety, J. A., Jr.
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Gruen, E. D.
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Hobbah, R. V.
Johnson, B. L.
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Kelso, H.
Lehman, R. S.
Livingston, S. M.
Roller, G. H.
Schaffner, P. P.
Spiegel, H. R.
Stapp, P.
Stevenson, A.
Turner, R. C.
Williams, C.

Spencerville

Rosenfelt, M.

Takoma Park

Crook, W. H.
Hogan, T. E.
Jones, W. K.
Meyer, C. H.
Stein, H.

Towson

Maryland State Teachers Col. Lib.

Trappe

Leonard, N. H., Jr.

Western Port

Umstott, H. D.

Westminster

Western Maryland Col. Lib.

Woodstock

Hogan, W. T.

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Amherst

Amherst Col. Lib.
Chandler, L. V.
Cole, C. W.
Gamble, P. L.
Lyon, H.
Massachusetts State Col. Lib.
Pettee, G. S.
Rozman, D.
Taylor, G. R.

Auburndale

Packard, R. M.

Babson Park

Babson Inst. Lib.
Ford, C. W.

Bedford

Vaughn, J. A.

Belmont

Huse, C. P.
Margolis, J.
Redlich, F. L.

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Boston Fiduciary and Research Associates, Mathematic Lab., 50 Congress St.
Boston Pub. Lib., Copley Sq.
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Healy, J. J.
Hosmer, W. A.
Hovde, H. T.
Hunt, B. C.
Hunt, P.
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Larson, H. M.
Learned, E. P.
Locke, H. D.
Masson, R. L.
Massachusetts State Lib., State House
McDonough, C. A.
McPherson, J. R.
Meriam, R. S.
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Myers, A. H.
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Shute, J.
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Slichter, S. H.
Smith, D. T.
Smith, G. A., Jr.
Snider, J. L.
Stark, W. R.
Strange, R. H.
Sutcliffe, W. G.
Sweet, H. N.
Teachers Col., Huntington and Longwood Aves.
Tosdal, H. R.
Ullman, A.
Welden, W. C.
Wilson, E. B.

Bradford

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Brewster

Cist, F.

Bridgewater

State Teachers Col. Lib.

Brocton

Brocton Pub. Lib., Main St.

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Ricardo, R.

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Bishop, R. L.
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Burbank, H. H.
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Chamberlin, E. H.
Cherington, C. R.
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Clarke, Stephen V. O., Harvard Univ., 34 Divinity Hall
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Conant, L.
Crum, W. L.
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Dunlop, J. T.
Freeman, R. E.
Frickey, E.
Friedrich, C. J.
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Hansen, A. H.
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Harvard Univ., Com. on Res. in the Soc. Sci., 38–40 Holyoke House
Harvard Univ., Law School Lib.
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MacRae, D., Jr.
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Morgan, J. N.
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Ruggles, R.
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von Mering, O. O.
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Wilson, E. W.
Wu, C. H.

Charlestown

Calder, P. R.

Chestnut Hill

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Everett

Di Venuti, A.
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Fall River

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Gardner

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Nantucket

Dell, B. N.

Needham

Morss, N.

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Ullian, F. S.

Newtonville

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Feinn, B. A.
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Orton, W. A.
Ross, S. C.
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Wheaton Col. Lib.

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South Lancaster

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Tufts College

Manly, L. F.
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Hubbard, J. C.

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Greig, G. B.
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Killough, H. B.
Killough, L. W.
Smith, E. L.
Smith, L.
Wellesley Col. Lib.

Wellesley Hills

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Elder, R. F.
Peterson, N. E.
Quirin, E. L.
Williams, J. B.

West Acton

Harris, S. E.

West Newton

Crosby, G. R.
Loomis, R. H.

Weston

McEwen, R. J.

Weymouth

Ivory, A.

Williamstown

Despres, E.
Fox, B.
McLaren, W. W.
Smith, W. B.
Williams Col. Lib.

Winchester

Jolley, E. O., Jr.

Wollaston

Rankin, A. F.

Worcester

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Fisher, P.
Holy Cross Col. Lib.
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Lukens, S. J.
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Worcester Free Pub. Lib., Main Lib., 12 Elm St.
Worcester Poly. Inst.

MICHIGAN

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Albion Col. Lib.
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Alma

Unstad, L. L.

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Anderson, G. R.
Bond, F. A.
Briggs, R. P.
Callis, H. G.
Davisson, C. N.

Dickinson, Z. C.
Elliott, M.
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Gilmartin, W. M.
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Pub. Lib., E. Huron and N. Thayer St.
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Univ. of Michigan, Gen. Lib.
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MacMorland, R. B.

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Howard, Sister J. M.
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Perine, F. A.
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East Lansing

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Central Michigan Col. of Educa. Lib.

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Nazareth

Nazareth Col.

Olivet

Olivet Col. Lib.

Orchard Lake

St. Mary's Col. Lib.

Owosso

Owosso Pub. Lib.

Romeo

Edwards, W. O.

Royal Oak

Royal Oak Pub. Lib.

Saginaw

Hoyt Pub. Lib.

Ypsilanti

Michigan State Normal Col. Lib.

MINNESOTA

Bemidji

State Teachers Col. Lib.

Collegeville

St. John's Univ. Lib.

Crosby

Independent School Dist. 51, Junior Col.

Duluth

Col. of St. Scholastica Lib.
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Duluth Pub. Lib., 1st Ave. W. and 2nd St.
Matteson, J. S.
State Teachers Col.

Excelsior

Burns, M. R.

Hibbing

Hibbing Junior Col. Lib.

Le Sueur

Jones, F. C.

Mankato

Mankato Free Pub. Lib.
State Teachers Col. Lib.

Minneapolis

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Chute, A. H.
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Dreiman, L. S.
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Basadre, Jorge, Biblioteca Nacional del Peru
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Valencia Cárdenas, J.
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Biblioteca Artigas-Washington, 18 de Julio 1457 Bis
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Ashton-Hatley, G.
Biblioteca Nacional
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SPAIN

Madrid

Aguilar, M., Editor, Libreria General, Serrano 22
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Banco de Espana, Servicio de Estudios
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A. B. Svenska Handelsbanken, Ekonomiska Sekr
Handelshogskolans Bibliotek, Sveavagen 65
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Industriens Utredningsinstitut
Konjunkturinstitutet
Nordiska Bokhandeln, Drottninggman 7
Robbins, James, USIS, American Legation
Sjöberg, E. A.
Svenska Teknologforeningen, Box 1028
Utrikespolitiska Institutet, Medborgplatsen 2–4

SWITZERLAND

Basel

Bank for Int. Settlements Lib., 7 Centralbahnstrasse
Oeffentliche Bibliothek der Universitat Basel, Postfach
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Berne

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Schweizerische Landesbibliothek

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Rappard, W. E.

Zurich

Hunold, A.
Institut für Wirtschaftsforschung, Eidg. Technische Hochschule
Kurt Staheli and Co., Bahnhofstrasse 70
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Minsk

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Moscow

Akademija Arkhtektury, Pushkinskaja ul. 24

Biblioteka, ul. Chernyshevskogo 38-a

Centraljnaja Biblioteka, Narkomoneshtorga S.S.S.R., ul. Kujbysheva 21

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Glavnyj Pochtamt, Pochtovyj jaschik 532

Glavnyj Pochtamt, Pochtovyj jaschik 24

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Institut Mirovogo Khozjajstva i Mirovoj Politiki, Volkhonka 14

Institut Tekhniko-Ekonomicheskoj Informacii, S.S.S.R. "Itein," Chkalovskaja ul. 47

Institut Vneshnej Torgovli, Babushkin per. 4

Nauchnaja Biblioteka, C.S. U. Gosplana S.S.S.R., B. Vuzovskij per. 2

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Vsesojuznaja Akademija Vneschnej Torgovli Narkomoneschtorga, Babuschkin per. 4

Vsesojuznaja Torgovaja Palata, ul. Kujbysheva 5

Taschkent

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Institut Ekonomiki Akad. Nauk, ul. Rustaveli 33

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Nat. Lib. of Wales

Univ. Col. of Wales Lib.

Penarth

Thomas, Gordon, 70 Redlands Rd.

ORGANIZATIONS WITH WHICH THE AMERICAN ECONOMIC ASSOCIATION IS AFFILIATED

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1219 16th Street, N.W., Washington 6, D.C.

Director, Waldo G. Leland; *Administrative Secretary,* Mortimer Graves; *Secretary for Grants-in-Aid,* Donald Goodchild; *Special Adviser,* D. H. Daugherty; *Director, Intensive Language Program,* J M. Cowan; *Office Manager,* Joe N. Bourne; *Bursar,* Rogers Johnson.

Delegates of the American Economic Association: Frank H. Knight, 1946, Joseph A. Schumpeter, 1948.

Constituent Societies: American Philosophical Society, American Academy of Arts and Sciences, American Antiquarian Society, American Oriental Society, American Numismatic Society, American Philological Association, Archaeological Institute of America, Society of Biblical Literature and Exegesis, Modern Language Association of America, American Historical Association, American Economic Association, American Folklore Society, American Philosophical Association, American Anthropological Association, American Political Science Association, Bibliographical Society of America, Association of American Geographers, American Sociological Society, American Society of International Law, College Art Association of America, History of Science Society, Linguistic Society of America, Mediaeval Academy of America, Population Association of America.

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230 Park Avenue, New York 17, N.Y.

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Staff: Donald Young, *Executive Director;* Paul Webbink; Elbridge Sibley; Eleanor Isbell; Carolyn E. Allen, *Controller.*

Representatives of the American Economic Association: Simeon E. Leland, 1944–46, Joseph J. Spengler, 1945–47, Norman S. Buchanan, 1946–48.

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National Bureau of Economic Research, Inc.

1819 Broadway, New York 23, N. Y.

Chairman: Shepard Morgan; *President,* C. Reinold Noyes; *Vice-President,* Boris Shishkin; *Treasurer,* George B. Roberts; *Executive Director,* William J. Carson; *Editor,* Martha Anderson.

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AFFILIATED REGIONAL AND ALLIED ASSOCIATIONS

Midwest Economic Association

Officers, 1946–1947

President, C. L. Christensen, Indiana University. *Vice-Presidents,* Lewis Severson, Beloit College, R. H. Blodgett, University of Illinois. *Secretary-Treasurer,* C. Woody Thompson, University of Iowa.

The Midwest Economic Association was founded in 1934, and has held annual meetings in April each year since. The programs begin Thursday evening and extend through Saturday forenoon. The area embraces Indiana, Illinois, Missouri, Kansas, Iowa, Nebraska, North Dakota, South Dakota, Minnesota, and Wisconsin. The organization is informal. Any person engaged in full-time teaching or research, or graduate study, or graduate study and research or teaching in the field of economics or commerce is eligible for membership. A registration fee of fifty cents is paid by those in attendance in lieu of a membership fee. The Association sponsors no publication. The annual program is prepared and the place of meeting is chosen by the Executive Committee consisting of the President, two Vice-Presidents, Secretary-Treasurer, and the past president last holding office.

Past Presidents

1934	S. L. Miller, State University of Iowa
1935	M. H. Hunter, University of Illinois
1936	Dale Yoder, University of Minnesota
1937	J. A. Estey, Purdue University
1938	John Ise, University of Kansas
1939	W. B. Taylor, University of Wisconsin
1940	J. E. Kirshman, University of Nebraska
1941	H. G. Brown, University of Missouri
1942–46	Jesse S. Robinson, Carleton College

Southern Economic Association

Officers, 1946

President, H. L. McCracken, Louisiana State University. *Vice-Presidents,* Joseph J. Spengler, Duke University, H. H. Chapman, University of Alabama. *Secretary-Treasurer,* James E. Ward, Clemson College.

The Southern Economic Association was organized in 1927. The purpose of the Association is the stimulation of economic thought and research in connection with the economic problems of the South.

Membership dues are: annual $3.00, sustaining $5.00, contributing $10.00, life $60.00, institutional $10.00. Membership fees include $2.00 in payment for a year's subscription to the *Southern Economic Journal* at the special rate granted to members of the Southern Economic Association. The *Journal* is a quarterly published jointly by the Association and the University of North Carolina.

Past Presidents

1928–30	Walter J. Matherly, University of Florida
1930–31	Lee Bidgood, University of Alabama
1931–32	Tipton R. Snavely, University of Virginia
1932–33	J. B. Trant, Louisiana State University
1933–34	R. P. Brooks, University of Georgia
1934–35	A. S. Keister, Woman's College, N. C.
1935–36	J. W. Martin, University of Kentucky
1936–37	C. B. Hoover, Duke University
1937–38	T. C. Bigham, University of Florida
1938–39	R. H. Tucker, Washington and Lee University
1939–40	J. B. Woosley, University of North Carolina
1940–41	Ralph C. Hon, Southwestern University
1941–42	Malcolm H. Bryan, Federal Reserve Bank of Atlanta
1942–43	Edgar Z. Palmer, University of Kentucky
1943–44	D. Clark Hyde, University of Virginia
1944–45	T. W. Glocker, University of Tennessee

Pacific Coast Economic Association

Officers, 1946

President, John B. Condliffe, University of California. *Vice-President,* Hugh Jackson, Stanford University. *Secretary-Treasurer,* Morrison Handsaker, Occidental College. *Editor,* Jack Guthrie, State College of Washington.

The Pacific Coast Economic Association, under a somewhat different name, was established in 1922, largely through the efforts of Alfred C. Schmitt, Edwin C. Robbins, Stephen I. Miller and Eliot Jones. The first meeting was held in Portland, Oregon. Membership is of two kinds: (1) institutional members, originally confined to accredited universities and colleges west of the Rocky Moun-

tains, but now changed to include any educational institution approved by the Executive Committee, west of the Rockies; (2) individual members, who may be any person interested in the theory, principles and problems of economics and business. In addition to the professional economists, many Pacific Coast businessmen are members.

One of the principles of the P.C.E.A. is to devote approximately one-third or more of each annual conference to problems of the Pacific Slope; another is to co-operate with the efforts of the Social Science Research Council.

The membership of the Association as of December 31, 1941, was 222. Institutional dues are $10.00 and $5.00, depending upon size of the institution; individual membership is $1.50 yearly. The principal publication is the annual proceedings.

Past Presidents

1922 Alfred C. Schmitt, Oregon State College
1923 Eliot Jones, Stanford University
1924 Rockwell D. Hunt, University of Southern California
1925 Howard T. Lewis, University of Washington
1926 Edwin C. Robbins, University of Oregon
1927 Theodore H. Boggs, University of British Columbia
1928 Ira B. Cross, University of California
1929 Howard S. Noble, University of California at Los Angeles
1930 Thomas A. Beal, University of Utah
1931 John A. Bexell, Oregon State College
1932 Shirley J. Coon, University of Washington
1933 Clement Akerman, Reed College
1934 Reid L. McClung, University of Southern California
1935 W. L. Wanlass, Utah State College
1936 Kenneth Duncan, Pomona College
1937 John B. Canning, Stanford University
1938 James K. Hall, University of Washington
1939 Richard B. Heflebower, Washington State College
1940 Arthur G. Coons, Claremont Colleges
1941 Robert D. Calkins, University of California
1942 Bernard F. Haley, Stanford University
1943–45 James H. Gilbert, University of Oregon

Economic History Association

Officers, 1946

President, Arthur H. Cole, Harvard University. *Vice-Presidents,* Robert G. Albion, Princeton University, Everett E. Edwards, Department of Agriculture. *Secretary-Treasurer,* Thomas C. Cochran, New York University. *Board of Trustees,* The officers of the Association, the editors of the *Journal of Economic History,* and Ernest L. Bogart, New York University, Harold U. Faulkner, Smith College, Paul W. Gates, Cornell University, Melvin M. Knight, University of California, Arthur G. Peterson (representing the Agricultural History Society), Department of Agriculture, Ralph M. Hower (representing the Business Historical Society), Harvard University. *Editors,* Frederic C. Lane, Johns Hopkins University, Thomas C. Cochran, New York University. *Assistant Editor,* Winifred Carroll Ferguson, New York City.

The Economic History Association was founded in December, 1940. It is open to all historians, statisticians, economists, and businessmen, who find profit from historical investigations. It publishes semiannually the *Journal of Economic History.* Annual meetings are held in September and semiannual meetings in conjunction with the American Historical Association and the American Economic Association.

Membership dues, which include subscriptions to the *Journal,* are: American and Canadian members $3.00; foreign members $3.25; sustaining members $10.00; and student members $2.00.

ALLIED SOCIAL SCIENCE ASSOCIATIONS

The Secretaries of Which Are Formally Organized in the Interests of Conducting Joint Annual Meetings

1946

	Presidents	*Secretaries*
American Accounting Association	Eric L. Kohler, Chicago, Illinois	Ernest C. Davies, Northwestern University
American Association of University Teachers of Insurance	C. A. Kulp, University of Pennsylvania	Chester A. Kline, University of Pennsylvania
American Business Law Association*		
American Economic Association	E. A. Goldenweiser, Institute for Advanced Study	James Washington Bell, Northwestern University
American Farm Economic Association	F. V. Waugh, U. S. Department of Agriculture	Asher Hobson, University of Wisconsin
American Finance Association	Harry Guthmann, Northwestern University	Neil Jacoby, University of Chicago
American Marketing Association	Lyman L. Hill, Evansville, Indiana	Harvey W. Huegy, University of Illinois
American Sociological Society	Carl C. Taylor, U. S. Department of Agriculture	Conrad Taeuber, U. S. Department of Agriculture
American Statistical Association	Isador Lubin, U. S. Department of Labor	Lester S. Kellogg, 1603 K Street, N.W., Washington 6, D.C.
Econometric Society	Jacob Marschak, University of Chicago	Alfred Cowles, University of Chicago
Institute of Mathematical Statistics	William G. Cochran, Iowa State College	Paul S. Dwyer, University of Michigan
Rural Sociological Society	Paul H. Landis, Washington State College	Leland B. Tate, Farm Foundation

* No information received.

ANNUAL MEETINGS*

LOCAL ARRANGEMENTS

Year	Place	Local Arrangements Chairman or Representative
1910	St. Louis, Missouri	
1911	Washington, D. C.	
1912	Boston, Massachusetts	
1913	Minneapolis, Minnesota	
1914	Princeton, New Jersey	
1915	Washington, D. C. (Also in San Francisco, California)	
1916	Columbus, Ohio	
1917	Philadelphia, Pennsylvania	
1918	Richmond, Virginia	
1919	Chicago, Illinois	
1920	Atlantic City, New Jersey	
1921	Pittsburgh, Pennsylvania	
1922	Chicago, Illinois	H. A. Milis
1923	Washington, D. C.	H. B. Drury
1924	Chicago, Illinois	L. D. H. Weld
1925	New York, New York	R. C. McCrea
1926	St. Louis, Missouri	I. Lippincott
1927	Washington, D. C.	H. G. Moulton
1928	Chicago, Illinois	J. W. Bell
1929	Washington, D. C.	L. R. Edminster
1930	Cleveland, Ohio	C. C. Arbuthnot
1931	Washington, D. C.	W. M. W. Splawn
1932	Cincinnati, Ohio	F. H. Bird
1933	Philadelphia, Pennsylvania	S. H. Patterson
1934	Chicago, Illinois	E. H. Hahne
1935	New York, New York	B. H. Beckhart
1936	Chicago, Illinois	G. V. Cox
1937	Atlantic City, New Jersey	E. M. Patterson
1938	Detroit, Michigan	R. P. Briggs
1939	Philadelphia, Pennsylvania	W. N. Loucks
1940	New Orleans, Louisiana	R. W. Elsasser
1941	New York, New York	C. S. Shoup
1942	Washington, D. C. (Cleveland canceled)	A. E. Taylor
1943	Washington, D. C.	A. E. Taylor
1944	Washington, D. C. (canceled)	J. Donaldson; M. Gilbert
1945	Cleveland, Ohio	D. A. Hill; R. L. Davison

* A tabulation of "Statistics of Annual Meetings" from 1885 to 1910 may be found in the "Papers and Discussion" on the twenty-fifth anniversary, published in the Third Series of the publications of the Association, Vol. XI (1910), No. 1, pp. 92–93.

TABLE I

MEMBERSHIP CLASSES AS OF MAY 15

	1941	*1942*	*1946*
Annual	3,176	3,404	4,144
Junior	83	97	90
Family	14	24	64
Complimentary	15	20	17
Honorary	19	18	15
Life	37	38	31
Totals	3,344	3,601	4,361

TABLE II

MEMBERSHIP STATISTICS, 1886–1945, YEAR-END FIGURES

Year	*Annual*	*Life*	*Honorary*	*Total*	*Year*	*Annual*	*Life*	*Honorary*	*Tota*
1886				182*	1916	2,033	80	7	2,120
1887				300*	1917	2,077	87	6	2,170
1888				500*	1918	2,130	87	5	2,222
1889				†	1919	2,125	86	5	2,216
1890				635*	1920	2,213	84	4	2,301
1891				718*	1921	2,230	102	3	2,335
1892				†	1922	2,296	102	8	2,406
1893	482	73	17	572	1923	2,479	98	10	2,587
1894	484	72	16	572	1924	2,691	98	9	2,798
1895	485	71	16	572	1925	2,816	92	8	2,916
1896	479	74	15	568	1926	2,538	88	14	2,640
1897	477	71	15	563	1927	2,562	86	16	2,664
1898	488	69	14	571	1928	2,620	78	12	2,710
1899	498	68	12	578	1929	2,671	79	16	2,766
1900	541	69	11	621	1930	2,704	76	17	2,797
1901	722	67	11	800	1931	2,626	64	15	2,705
1902	782	67	11	860	1932	2,488	62	19	2,569
1903	757	67	11	835	1933	2,306	58	20	2,384
1904	792	67	11	870	1934	2,433	54	19	2,506
1905	800	66	11	877	1935	2,473	53	18	2,544
1906	794	66	11	871	1936	2,556	48	17	2,621
1907				1,002*	1937	2,652	44	17	2,713
1908				868	1938	2,764	41	19	2,824
1909				1,205	1939	2,906	40	20	2,966
1910	1,440	69	10	1,519	1940	3,089	40	19	3,148
1911	2,103	78	9	2,190	1941	3,406	37	19	3,462
1912	2,369	88	9	2,466	1942	3,617	37	17	3,671
1913	2,157	83	9	2,249	1943	3,749	33	16	3,798
1914	2,060	81	8	2,149	1944	3,913	32	16	3,961
1915	2,004	80	7	2,091	1945	4,108	31	15	4,154

* Total includes members and subscribers.
† Figures for these years not available.

TABLE III

MEMBERS AND SUBSCRIBERS FOR SELECTED YEARS
YEAR-END FIGURES

Year	*Members*	*Subscribers*	*Total*
1893	572	82	654
1902	860	151	1,011
1910	1,519	183	1,702
1920	2,301	565	2,866
1930	2,797	1,056	3,853
1935	2,544	1,118	3,662
1936	2,621	1,178	3,799
1937	2,713	1,219	3,932
1938	2,824	1,270	4,094
1939	2,966	1,292	4,258
1940	3,148	1,327	4,475
1941	3,462	1,319	4,781
1942	3,671	1,219	4,890
1943	3,798	1,293	5,091
1944	3,961	1,533	5,494
1945	4,154	1,752	5,906

NOTE: Some of the figures for earlier years have been estimated.

TABLE IV

GEOGRAPHICAL ANALYSIS OF MEMBERS AND SUBSCRIBERS IN THE UNITED STATES

(As of June 15, 1946)

States	*Members*	*Subscribers*	*Total*
NORTHEAST			
Maine	11	7	18
New Hampshire	25	6	31
Vermont	15	8	23
Masaschusetts	209	50	259
Rhode Island	12	5	17
Connecticut	77	19	96
New York	851	234	1,085
Delaware	11	3	14
Pennsylvania	211	64	275
New Jersey	124	33	157
Maryland	163	17	180
West Virginia	10	8	18
District of Columbia	681	115	796
	2,400	569	2,969
MIDDLE			
Ohio	163	58	221
Michigan	81	34	115
Indiana	72	32	104
Wisconsin	70	29	99
Illinois	328	77	405
Minnesota	63	34	97
Iowa	50	25	75
Missouri	67	34	101
	894	323	1,217
SOUTHWEST			
Oklahoma	16	19	35
Texas	49	49	98
New Mexico	5	3	8
Arizona	6	3	9
	76	74	150

States	*Members*	*Subscribers*	*Total*
SOUTHEAST			
Tennessee	29	25	54
North Carolina	44	23	67
Mississippi	6	8	14
Virginia	259	26	285
Kentucky	29	13	42
South Carolina	9	7	16
Georgia	20	22	42
Alabama	13	16	29
Arkansas	15	12	27
Florida	24	11	35
Louisiana	23	16	39
	471	179	650
NORTHWEST			
North Dakota	3	6	9
South Dakota	6	8	14
Nebraska	22	15	37
Kansas	36	20	56
Montana	10	4	14
Wyoming	6	4	10
Colorado	24	14	38
Idaho	3	5	8
Utah	10	5	15
	120	81	201
FAR WEST			
Oregon	24	15	39
Washington	34	21	55
California	210	84	294
Nevada	4	2	6
	272	122	394

SUMMARY

	Members	*Subscribers*	*Total*
Northeast	2,400	569	2,969
Middle	894	323	1,217
Southwest	76	74	150
Southeast	471	179	650
Northwest	120	81	201
Far West	272	122	394
A.P.O. and F.P.O.	22	37	59
	4,255	1,385	5,640

TABLE V

GEOGRAPHICAL ANALYSIS OF MEMBERS AND SUBSCRIBERS FOR SELECTED YEARS

UNITED STATES AND FOREIGN

	United States and Possessions									Other Countries*							
	N.E.	*Middle*	*S.E.*	*S.W.*	*N.W.*	*Far West*	*Possessions*	*A.P.O. F.P.O.*	*U.S. Total*	*Europe*	*Africa*	*Australasia*	*No. Amer.*	*Cent. Amer.*	*So. Amer.*	*Foreign Total*	*Grand Total*
1933																	
Members	1,353	596	125	57	83	166	—		2,380	65	6	27	37	3	3	141	2,521
Subscribers	237	180	78	47	55	70	7		674	109	6	132	25	2	7	281	955
Total	1,590	776	203	104	138	236	7		3,054	174	12	159	62	5	10	422	3,476
1940																	
Members	1,686	712	278	59	110	192	7		3,044	58	4	9	34	2	2	109	3,153
Subscribers	329	246	126	55	63	100	16		935	95	13	131	32	5	12	288	1,223
Total	2,015	958	404	114	173	292	23		3,979	153	17	140	66	7	14	397	4,376
1941																	
Members	1,772	735	325	78	114	211	5		3,240	45	5	7	38	3	4	102	3,342
Subscribers	362	261	150	56	69	100	17		1,015	53	10	133	30	3	16	245	1,260
Total	2,134	996	475	134	183	311	22		4,255	98	15	140	68	6	20	347	4,602
1942																	
Members	1,963	748	395	76	114	205	9		3,510	34	5	4	36	5	7	91	3,601
Subscribers	368	269	150	61	71	101	7		1,027	30	11	43	31	7	23	145	1,172
Total	2,331	1,017	545	137	185	306	16		4,537	64	16	47	67	12	30	236	4,773
1943																	
Members	2,098	706	422	95	115	211	12		3,659	35	5	4	39	4	11	98	3,757
Subscribers	396	270	160	65	70	100	7		1,068	26	11	37	36	3	22	135	1,203
Total	2,494	976	582	160	185	311	19		4,727	61	16	41	75	7	33	233	4,960
1946																	
Members	2,400	894	471	76	120	272	8	22	4,263	45	7	10	58	8	18	146	4,409
Subscribers	569	323	179	74	81	122	16	37	1,401	199	23	111	58	23	88	502	1,903
Total	2,969	1,217	650	150	201	394	24	59	5,664	244	30	121	116	31	106	648	6,312

* Europe: British Isles, Italy, France, Germany, U.S.S.R., Switzerland, Sweden, Norway, Rumania, Poland, Hungary, Austria, Spain, Belgium, Czechoslovakia, Holland, Finland, Denmark, Turkey, Iran, Iraq, Lebanon, Trans-Jordan, Palestine, Estonia, Greece, Latvia, Yugoslavia, Portugal, Luxembourg.
Africa: Union of South Africa, Egypt, French North Africa, Italian East Africa, Zanzibar.
Australasia: Australia, New Zealand, Tasmania, China, India, Burma, Japan, Ceylon, Indo-China, Straits Settlement, Manchukuo, Chosen, Dutch East Indies, Siam.
North America: Canada, Cuba, British West Indies, Haiti, Dutch West Indies.
South America: Argentina, Chile, Uruguay, Peru, Ecuador, Brazil, Colombia, Venezuela, Bolivia, Paraguay.
Central America: Mexico, Salvador, Nicaragua, Costa Rica, Dominican Republic, Guatemala, Panama.